

special MG issue

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**SPORTS' CARS
ILLUSTRATED**

FEBRUARY 1956

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FUEL, OIL, MIRACLE POWER— IT TAKES ALL 3 TO WIN A RACE

By DEB SNYDER, 1952 and 1953 IMCA Speedway Champion . . . winner of 58 out of 69 races



If you've tinkered around car engines like I have, you know the thrill you get when you find something new and good.

Well, I had that thrill when I discovered Miracle Power. I'd been having a lot of trouble with motor sluggishness, and I don't mind saying I was plenty worried. A sluggish motor never won a big race, and if I don't win races I've got to pull in my belt a notch or two. Besides, a racing car is a darn expensive piece of machinery—worth more than a millionaire's limousine—and it's no joke when it doesn't perform up to snuff.

Why sluggishness can attack even the best of motors

Here's what you should know about motors—and I'm talking now about all modern high-compression jobs, not just racing cars. Sluggishness, sticky valves, noisy hydraulic lifters, slow pick-up, and most other troubles are usually the result of insufficient lubrication. It's a fact that even the very best of motor oils can't do the *whole* lubrication job.

For one thing, modern engines develop heat as high as 1400°F in the combustion chamber, the very heart of the engine. Now even the best oil will burn off at around 550°F. And oil that's burned off just can't lubricate.

For another thing, it takes about 5 minutes after you start your car for the cold oil to reach all moving parts. Meanwhile, vital moving parts are dry, and wearing out fast because of slow-moving oil. That's why most motor wear takes place right after you start.

So the inability of even the best oils to give complete full-time lubrication is the problem. And until I found Miracle Power, I didn't know how to solve it.

How Miracle Power overcomes sluggishness, increases power

The secret of Miracle Power is the fact that it contains colloidal synthetic graphite—a pure petroleum product—in suspension. Now any lubrication engineer will tell you that synthetic graphite is just about the world's best lubricant for many applications. The synthetic graphite is suspended in Miracle Power by a secret, exclusive process.

You use Miracle Power in your oil and gas. It is carried to every part of your motor. And the synthetic graphite forms a kind of film—the same sort of action you see when you spread warm butter on warm bread. The film stays on. It doesn't drain back into the crankcase, and it doesn't build up on itself.

This breathlike film turns the trick, for it gives you lubrication *always*. It lubricates when the oil film burns off or ruptures. It's on the job the instant you step on the starter, providing lubrication to protect friction surfaces before oil circulates. It gives you lubrication in depth—prevents sticky valves, quiets hydraulic valve lifters, ends sluggishness,

cuts down oil and gas consumption, prevents costly repair bills. You get all this—and extra performance besides. For Miracle Power brings out every ounce of pick-up and power your engine can deliver.

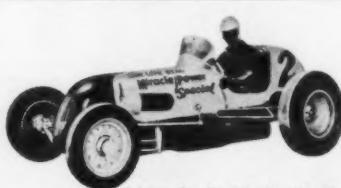
Where you can get Miracle Power

You'll find Miracle Power at car dealers, service stations, garages. It is available at Ford, Studebaker and International Harvester dealers in their own Miracle Power containers. The 8-oz. can costs 85¢, and you put a can in both gas and oil every 1000 miles.



There's also a 3½-oz. can to use in gas for extra upper cylinder lubrication between 1000-mile treatments. That's mighty little for everything this product gives you!

Yes, it takes fuel, oil and Miracle Power to win races—and to give you the peak performance you paid for when you invested in your car!



I keep the Car Life-Miracle Power Special at its peak with Miracle Power—and I use it just as regularly in my family car. I wouldn't be without it!

DUANE CARTER, International Racing Champion



Miracle Power

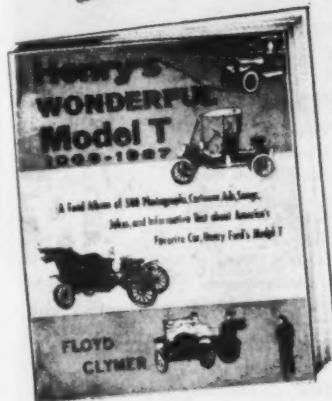
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Foreword by Cecil B. deMille

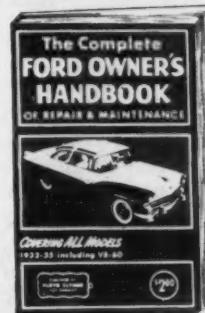
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letters

The Editor, SCI:

Do you have time for a little human interest story? Well, Mrs. Grover is a graduate psychometrist working as a General Supervisor of Curriculum in a city school system. A friend of hers at work has a son in a mental institution. They haven't been able to do anything for him, as he even lost his ability to read. His father spoke to Mrs. Grover about help and she learned from him that the only spark of interest or intelligence that the son showed was an interest in sports cars, believe it or not! So she suggested a remedy and I was able to help. She begged me for all my back numbers of S.C.I. for his father to take to him. I tried to get her to make him promise to bring them back but she couldn't. The pictures snapped him out of it, he began to read again and he began to associate and converse with other patients. As a result, they wore the issues out.

Ray Grover
Atlanta, Georgia

We are glad to hear SCI has therapeutic value . . . medical journals look to your laurels!

The Editor, SCI:

Let me say right off that SPORTS CARS ILLUSTRATED is an attractive and valuable addition to any enthusiast's library.

And now the criticism. In your November issue you featured an article on the Skoda (*Cars for U.S. Chemicals*) by Jim Robertson, which is perhaps a classic of journalistic innuendo. Mr. Robertson may not agree with me, but I think it is a safe assumption that readers of SCI are anti-Communist (if they aren't, who is?); hence the article's pretentious and self-righteous pose of Defender of Patriotism (presumably ours) is both insulting and out of place. Is the Skoda such a good car that readers would be tempted to buy it after reading an *objective* report? Or is Mr. Robertson trying to capitalize on a type of expose that went out of fashion some time ago?

When I buy a magazine on cars, I expect to read about cars. Sometimes it is necessary to give some social and political background in discussing a certain make or event, but an article should always focus on that which has to do with automobiles. I am perfectly willing to accept "your

reporter's" patriotism without his having to kick a poor little Skoda to prove it.

Eliot Fremont-Smith
New York, New York

The Editor, SCI:

Briggs Cunningham has been working long and hard creating cars of all-American make, and doing a laudable job maintaining our nation's awareness of the best in Europe by importing and racing at his own expense the best in European cars. The lack of high performance engines of American make has now found its consequence. Cunningham is dismantling his West Palm Beach factory.

No more will he take a team to Le Mans or bring home honor to U.S. as he did in 1954, placing 3rd and 5th.

Well, maybe again someone will throw their energy into racing, realizing the huge disgrace the world's greatest car producer, the U.S.A., sustains in not producing a car that will stand up against Europe's.

Samuel Carterdale
St. Louis, Missouri

The Editor, SCI:

The crowd in my neck of the woods very much enjoyed your piece on Hagerstown. You always seem to get a behind-the-scenes feeling in your pieces. That picture by Dan Rubin of the crewman and driver wearing horror masks was a real gasser.

Bob Tallow
Salt Lake City, Utah

Sorry, but Tom Burnside gets the horror mask credit.

The Editor, SCI:

Congratulations on the Skoda story. It's refreshing to pick up a magazine that is on its toes and won't let those Russians put anything over on the American public. Too many people are apathetic about the menace that foreign cars present to hard working people in the automobile industry. Let's keep those European junk boxes away from our shores. Remember the Mayflower!

John Lukeczewitz
New York City

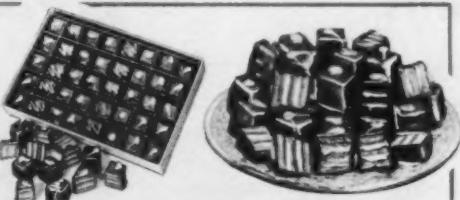
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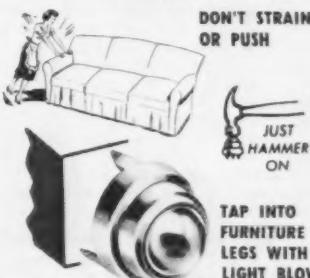
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sports cars illustrated

february 1956
no. 8 vol. I

features

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Photographer Bob Rolofson Anschromed model Nona Tosh in the sleek new MG A as the traffic in New York's Central Park raced by.

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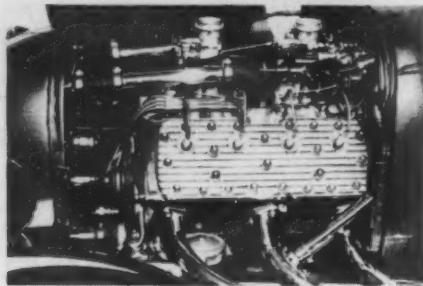


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book review

**The Sports Car,
Its Design and Performance**
by Colin Campbell
Robert Bently, Inc.
262 pages, \$6.50

Underneath a simple blue buckram cover and unpretentious title lies some of the best material on the modern sports car that has yet been assembled. The author is a peculiar breed of technician, in that he has the ability and desire to make his subject understandable to the serious sports car enthusiast. For twelve chapters Mr. Campbell discusses every phase of design and principle of practical interest. When he is through, his 262 pages have given the reader a good picture of what happens at every turn of the wheel and rev of the engine, and why the car is built the way it is. This is not to be considered a book for the beginner, but rather, for the man who has a basic understanding of principles and wants to go further into the whys and wherefors of the subject. Infinitely detailed and well illustrated with formulas and diagrams, this book is a must for those who want a well-rounded reference volume.

S. G.

Sports and Classic Cars
by Griffith Borgeson
and Eugene Jaderquist
Prentice-Hall, Inc.
480 pages, \$12.50

A one volume library exists between the covers of this book. Dividing the history of sports and classic cars into three sections, "Sports Cars Between the Wars," "Classic Cars . . . de Grand Lux" and "Mid-Century Phenomenon — Automobile Mania," the authors give a solid, overall introduction to each section, then proceed with full, authoritative histories of each make. These read more like adventure stories than the dry accumulation of events we are used to reading.

In the section on Jaguar, for instance, we see William Lyons in the birth of new automotive concepts. After World War II with no money to retool, tax restrictions, a home market that couldn't buy, Lyons set up his distribution network in the United States, and became with MG the name synonymous with "sports car" in this country. It was just this perception

out-of-need of Lyons and others that began the huge recognition of European car manufacturers of the American market.

The most successful, unsuccessful classic in the United States, the Pierce-Arrow, is the subject of another fascinating tale by the authors. How financial difficulties overwhelmed the magnificent and much copied car reads like a page from *Hamlet*-made-automotive during the fabulous era following World War I and the subsequent depression.

Some of the histories begin with the very initial impulse of a dreamer in the previous century and his attempt to create a great car and at the same time build a *salable car*. The role of Grand Prix and sports car racing for each manufacturer is excitingly detailed. Healy's entries at Le Mans are followed closely, and the writing contains all the drama that the little marque's successful record suggests.

A full complement of 127 pictures (18 of them in color) accompanies the text. At the end of the book, as a permanent reference library for those who love to compare specifications, there are 40 pages of charts.

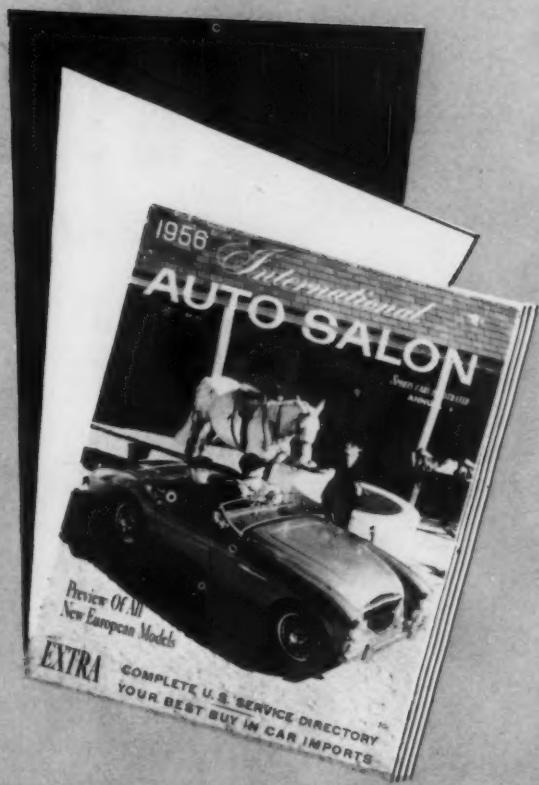
The authors, Griffith Borgeson and Eugene Jaderquist, have been authorities in the automotive field for as long as anyone can remember. Along with his other talents Borgeson has been racing consultant to a number of major automotive manufacturers. Jaderquist has written for almost all the significant motor magazines, covering many international events. Much of the material presented here is unavailable elsewhere, even if the reader wanted to search.

It is impossible to list or even suggest in this space the great number of sports and classic cars covered by this book, but the writers do not ignore the anciently obscure nor the very modern. From interviews and personal experiences they have gathered magnificient material.

A reference library, a history, a modern adventure story, a spec-lover's paradise, this book is all of them. Here is a book you will often refer to and long keep for its extensive and exciting coverage of the sports and classic car field.

D.M.

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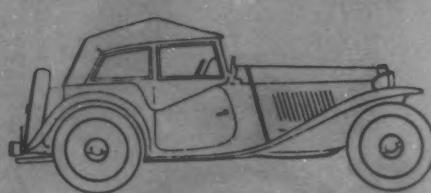
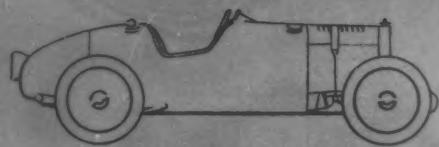
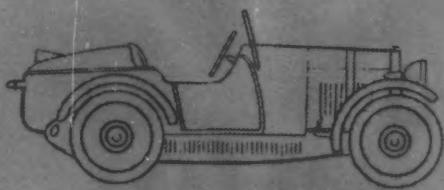
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THE HISTORY of the world's most fascinating car is at times more fascinating than the car itself. It is a history punctuated with paradoxes.

Created as a British-type hot rod, the first model was bought by wealthy young bloods who could have afforded better, more expensive cars.

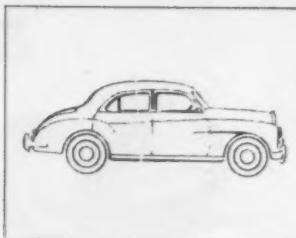
Imported into the U.S. in 1936 as a very potent little sports car the name didn't catch on in this country until 1946 and then with a relatively undistinguished model.

MG was a poor selling car when it held class G and H marks, and was the scourge of sports car racing. Yet right after an astonishing performance at Le Mans the competition program was dropped, Morris took over the firm and only then did sales start to climb.

Now the MG A comes into being with a new factory racing program, just when there may be few European races in which to prove the car.

It all started back in 1923 at the Morris Garages when a gent named Cecil Kimber took a Morris Oxford chassis and engine, added two bucket seats and cycle fenders. There was

*Thirty-three years of
glorious history is the
heritage of the MG.*



By BOB FENDELL

no windshield on MG No. 1, the hand brake was outside the flimsy bodyshell, but the car performed so much better than others of its day that Kimber was soon making specials for his road racing acquaintances.

The genealogy of the MG is more confused than a stray mongrel's, because the early cars were practically custom assembled autos down to the last interchangeable part. This latter fact also contributes to the mixup. It was Kimber policy to utilize as many parts in common from one model to the next, incorporating new engineering developments as they occurred.

Some of the engineering changes came so fast that they never reached the completed car stage. This explains why, according to John Thornley (author of *Maintaining the Breed*) who grew up with the company, the first production model in 1927 was called the Mark IV, then the Mark I came next.

It seems there were three engines built before the Mark IV. Then when the first overhead cam engine was completed, the boys decided to call it the MK I.

There are several species of MG, in addition. They are the Midget, first manufactured in 1929, the Magna, a six-cylinder car which did quite well, and the Magnette, a passenger tourer. Then there was the EX or experimental series which is treated in a separate article.

(The genealogy of the MG is on a chart on the next page. Any time you get confused, merely refer to it.)

According to the best sources available, Kimber aimed his little car at a special audience—the motor cyclist who was either too old or too well-to-do for that sort of thing. Paradoxically, he attracted a mixed grouping. One was an ex-driver of that most luxurious of all British sports cars, the Bentley. Leslie Callingham, who had competed at Le Mans in a Bentley, won a speed trial at Brooklands (British version of Indianapolis) with one of the first Midgets off the line.

In 1931, Kimber put out the MG F Magna, a 1271 cc six with an overhead cam that was merely a scaled up M. It ran 37.2 bhp at 4110 rpm and gave an honest 70 miles per hour. The F2 in 1932 had minor engine changes and much

1947



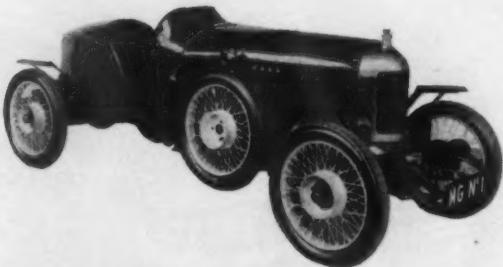
1936-1939



1934-1936



1923



better brakes. The L in early 1933 and the J087 cc engine and the K Magnette was developed concurrently.

K3 was the hot racing model, built to run 110 miles per hour at 120bhp. The 1087 cc engine was blown and peaked at 6500 rpm.

The 1933 Tourist Trophy race, in which Tazio Nuvolari drove the K-3 was perhaps the highlight of the car's racing career. Nuvolari showed up in Ulster well before the race to get the hang of the car and the course. He promptly scared the brogue out of half the citizenry the way he took corners, missing building edges sometimes by inches. But his mechanic, Alec Hounslow, seemed perfectly at ease after the first few practice laps.

Hounslow recalls that Nuvolari had some trouble controlling the K-3 first lap around, spun it once or twice while he was running it full speed into curves. Then he smiled after each spin and offered to bet Hounslow he could set his right front wheel over a small coin on a corner three laps running. But Hounslow didn't take the bet.

The K-3 was the apple of Kimber's eye but it was the midget J which almost stole the show in the Tourist Trophy. With Hugh Hamilton—to die the following year piloting a Maserati in the Swiss Grand Prix—driving, Nuvolari had a fight on his hands.

For three solid hours Hamilton and the Italian locked horns, breaking lap records as they went. The K-3 had taken the lead only when the Midget had a seven minute pit stop earlier in the race.

Hamilton cut down this lead repeatedly as the K-3 had some trouble with its pre-selector gear box. It was apparent

to all that the race would be decided in the last laps.

And so it was. Nuvolari and K-3 won by 40 seconds when Hamilton made a stop for gas. The K-3 also finished with such a dry tank that Nuvolari had to take on gas to run his victory lap. And Hamilton's average speed (73.46 mph) exceeded the previous year's lap record.

1934 saw the seeds of the end of the MG era in road racing sowed, although models continued to spew forth with amazing quickness. There were three separate Midgets and a new version of the Magnette K.

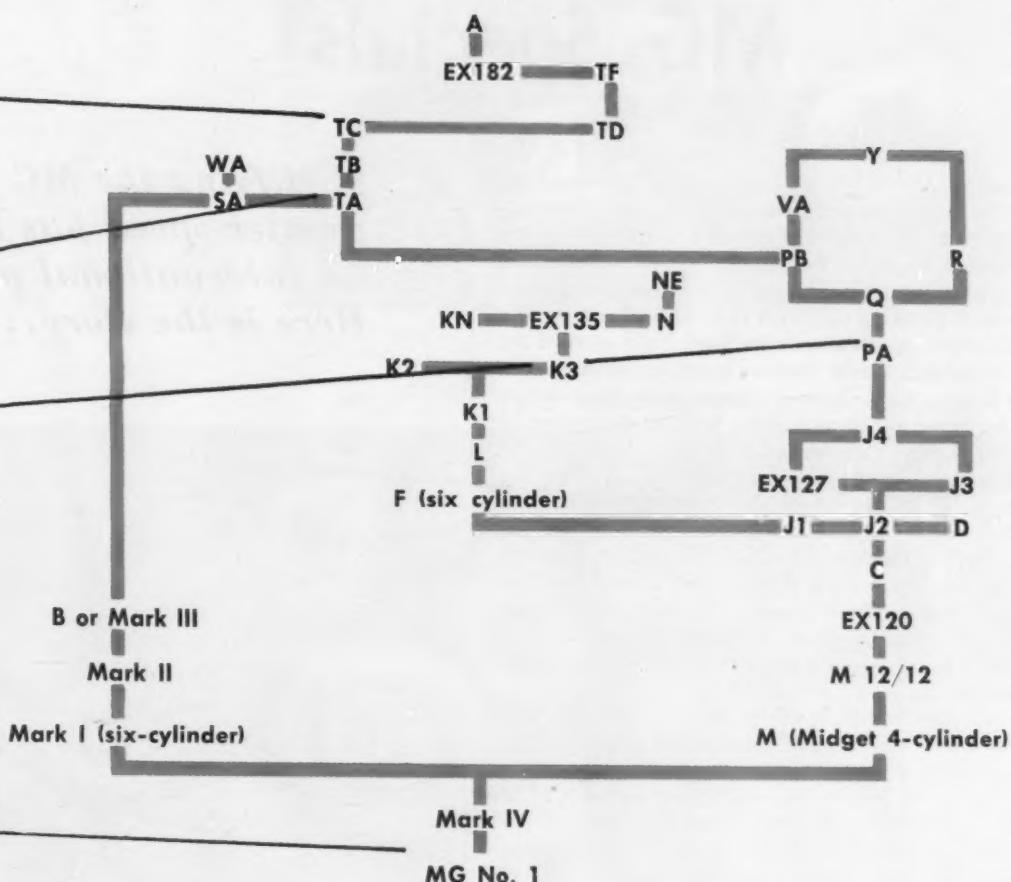
The P had a longer chassis, a three-bearing crankshaft in its 847 cc engine and in PA form was too heavy to be a really hot performer. The PB had its cylinders bored to 60 from 57 millimeters, and had a little more power.

The Q, called the last and finest of the real Midgets, had a 750cc supercharged powerplant which turned 113 bhp at 7200 rpm. It was a real bomb, but was sabotaged when almost every race banned supercharging for 1934.

The R, an outright racer, was an engineering gamble that never was given the time to pay off. MG engineers were still working bugs out of it when Morris Motors took over and shelved it. It had a unique wishbone chassis, four-wheel independent suspension, a redesigned OHC 750 c.c. powerplant and was clocked as high as 123 mph for short spurts.

The K-3 with a new cylinder head, body, and supercharger helped sweep the first five places in the 1934 Isle of Man race. Another version of this car, supercharged (the N), won the 1935 Tourist Trophy Race over a Rolls-Bentley.

THE MG FAMILY TREE



In 1935, Kimber decided to assault Le Mans for the Rudge-Whitworth Trophy (given to the most reliable car over a two-year span).

He commissioned Eyston to form an all-woman racing team to run the race with as few mishaps as possible. He chose the PA model to make the run.

Eyston formed and drilled a team of woman drivers and Kimber got all the publicity he had foreseen. But part of the press nicknamed the gals "Eyston's Dancing Daughters" a name which stuck.

The girls went over and did the job at Le Mans. With discipline more perfect than ever possible with a male team, the entire entry ran the whole 24 hours at a 53 mph average. And the only replacement was a tail lamp bulb. But it was all for naught. The ban on factory team road racing fell soon after and up until the present day MG has been nowhere on the European racing scene.

It remained for MG to spark a much more vital exploit—the boom of sports cars in America.

Sam & Miles Collier, (Sam died in a sports car racing accident) first imported the MG to America in 1936. The J2 sold for \$1,200 delivered in New York, but it met with disinterest in a country just emerging from a depression.

In 1936 the new MG management brought out the TA, a still larger two-seater which abandoned the OHC engine for a 1292 cc pushrod overhead valve job. In 1938 they brought out the TB 1250 cc, which powered the MG up until this year. The Midget had grown from a 1-inch wheelbase in 1929 to 94-inch wheelbase in 1938. The

Colliers imported both these models, but enjoyed only a modest success.

It wasn't until 1946-47 that MG hit the jackpot in this country. Yanks who had been stationed in Britain remembered the "cute little two-seaters" and were impressed because U.S. passenger cars of the post-war period were large lumps of hard-to-steer iron. The boys also remembered the road races and since this was an easy money era, MG boomed.

The TC came out in 1947 with 54 bhp and an 80 minus mph top speed. The car weight was now 1,900 lb. The 1950 TD had a new independent front suspension which rode softer plus rack and pinion steering. It was even heavier and had larger fenders. The Mark II was a competition version of the TD featuring 9.3:1 compression ratio.

Soon, because Americans were discovering other European cars, the MGs were competing strictly in MG races—with the exception of Specials like that of Ken Miles of California.

The TF only partially arrested the falling MG sales and the TF 1500 couldn't compete with the rest of the market pricewise. Hence the laudable shift to the MG A.

MG returned a factory team to the field this year. Its Le Mans entry ran flawlessly but was not let all out after the tragedy.

Now a part of the large British Motors Corp., it remains to be seen how well the A will do in its 1500 c.c. class. Certainly it is refreshing for MG enthusiasts to know that the sign of the octagon is once again a challenging marque.

MG Specials

NO matter how well a manufacturer designs and constructs a car there are always those who feel they can improve on it. Some succeed in only destroying the fine engineering that the factory created, but those who have the background, experience and imagination often produce record breaking cars with innovations leading to a definite advance in sports car design. Here is the story of the "specials" of the MG family, and the men behind them.

Captain George E. T. Eyston, a large active man with a penchant for going as fast as possible without the bother of steering around other cars, started it all when he convinced Cecil Kimber that an experimental special MG could bring prestige to his fledgling marque by capturing the class H records.

Main mechanical difference between the M and the EX120 was a redesigned block which helped bring EX120 into the 750 cc class. It was lightened considerably and it got its first tryout early one morning on the Newmarket Road.

Eyston and a contingent of gents from the factory hoped the road would be free of people, cows and police. It was free of people and police. When Eyston buzzed past on a practice run, it was free of cows, too. They had decided the fields offered greener pastures at that.

Was the EX120 to become the first 750 cc car to hit 100 mph? Eyston and the factory boys brought it over to the Montlhery track in France with that as their ultimate goal.

After numerous tuneup runs, Eyston got his 50 kilometer class H mark at 86.38 mph with a host of marks for lesser distances. This mark and most of his others stood for as long as it took Campbell to get out on the sands of Daytona Beach with a supercharged Austin. But Eyston came right back to Montlhery and turned five kilometers at 103.13 mph.

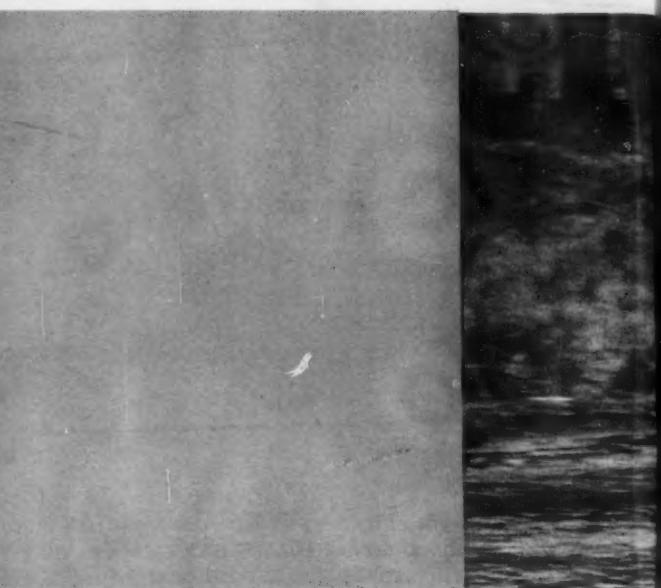
After that the EX120 formed the basis of Mark II Montlhery which evolved into the C MG, the J2 and finally the EX127, started in 1931 and ready to run in Feb., 1932. This was the famed Magic Midget, first car to go two miles per minute, powered by only a 747 cc engine. Its C-type engine was further modified by a Powerplus supercharger (Eyston was interested in the company) and it had the first aluminum body—partially streamlined—to go on an MG.

Because Montlhery was unavailable, Kimber decided to try a new record site, Pendine Sands, in Wales. This was the place Campbell had made his first land speed record. Eldridge, a factory employee was driving the car because Eyston was not quite over burns, suffered when the EX120 blew up and burned to a cinder at Montlhery. Eldridge made his practice run while the official timers were setting up their gear.

Then he started the official run. He was breezing along beautifully when the crew called him in. It seems the timing officials hadn't put enough ink in the timer, so there was no record of the run. And by the time they got things fixed up, the tide had come in.

The weather then turned bad and EX127 had had it until December when Eyston, returned to Montlhery, got his 120.56 miles per hour and every other H class record in the book.

Modifying the MG for greater speed has become an international pastime. Here is the story.....



First of the new breed . . . the MG EX-182 Le Mans prototype



Captain George Eyston and his most famous of MG specials.



The "Magnette"

The fabulous Ken Miles and his MG special.



It was during these runs that Eyston's co-driver, Bert Denly was helping assault the 12 hour record. A precise fellow, Denly liked to see his instrument panel even during the hours of darkness. His cohorts strapped a flashlight to his chest, which he could flick on anytime he wanted to see the gauges. He was pushing EX127 through a high wind near the end of the run when he noticed his oil pressure slipping.

Denly came in and told the pit crew, pointing discreetly to the fact that he was being drenched in Castrol. He was told to press on and come in any time he felt the oil reserve disappearing completely. Like a good soldier, he returned to circling as the crew began calculating their oil stock. Eyston and two others came to the same conclusion almost simultaneously. Off they sprinted toward the Wakefield Oil Co. store, locked tight for the night. Eyston smashed the lock and rolled out an oil drum. The boys lugged it back to the trackside in time to keep EX127 whirring around. Denly looked like an end man in a minstrel show, but he just nipped the 12 hour mark before the rear main bearing gave way.

EX127 had been given a new body shell so streamlined and reduced that Eyston could not fit the cockpit. So

Denly had to drive once more.

Now, friends or no, Austin was not above a bit of psychological warfare. The Montlhery track is built above workshops, and Jamieson and Co. found out that the speed runs of their car vibrated the track so much that it set off stop watches of the rival firm involuntarily, showing 115 mph readings.

Denby decided he could capitalize on this too. He took the MG on a trial run minus intermediate gears. The Austin cohorts couldn't help but time the laps, getting a reading of about 118 mph. They chortled in glee figuring this was MG's best.

So the next day Denby fitted bigger tires, put his intermediate gears back in and tolled off 750 cc records of 128.65 for the mile and 125 for the 10 miles. Staring at what their stop watches told them was impossible, Austin packed up and went home.

EX127 was sold within a year to a minuscule German by the name of Bobby Kohlrausch who fitted a smaller body, put in a Q engine, and added front brakes. The car was painted white and had a four-leaf clover on one side and a Union Jack on the other. The car lost the Union Jack as soon as the Nazis saw it.

In 1935 Kohlrausch took the flying mile class mark at 130

(Continued on page 63)

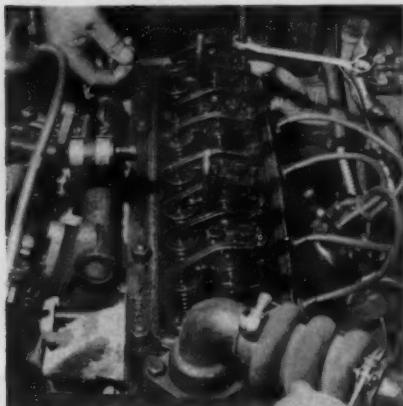


Photograph by Irv Dolin

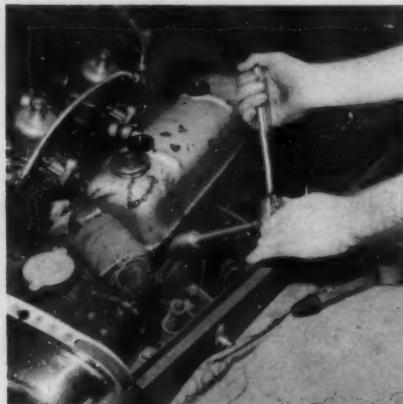
here are the
simple
step by step
service procedures
for your MG.



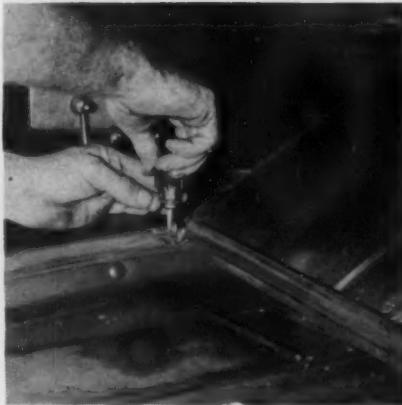
Rag between hood will protect paint finish and should be inserted before removing the hood. Place hood against wall away from work area, where it cannot be damaged.



MG valves are set by using a screwdriver and wrench to free rocker arm. Gap to a "running" fit. Loosen nut, turn screw until proper setting is attained. Gap to .019 hot.



Remove first spark plug (a ratchet wrench with extension is convenient), making sure area around plug is dirt free. Be careful not to cross thread plugs when they are replaced.



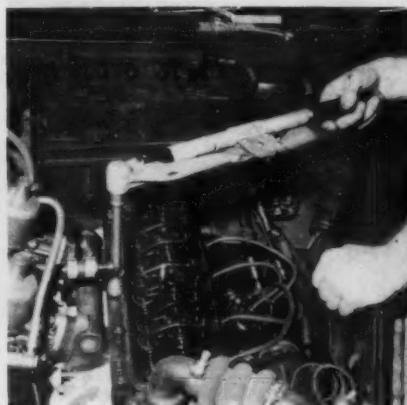
Single screw holds hood in place. Use stubby screwdriver, working carefully to avoid stripping the threads. Place screw back into hole after hood is removed to avoid loss.



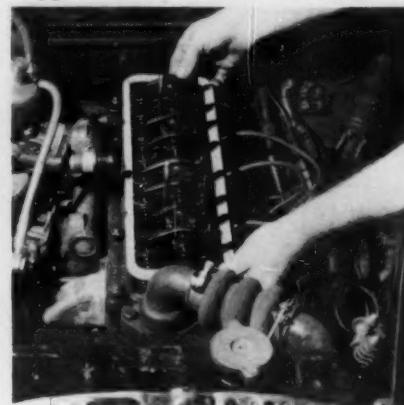
Rebreather hose must be removed before cover can be taken off. Loosen the two screws on the hose clamp and remove the hose from the valve cover nipple.



Using hand crank, rotate the crank-shaft until the nearest rocker arm is in its highest position. This sets up valves for proper setting. Make sure ignition is off and car is out of gear.



Tighten head to 600/in using a torque wrench. Do not use a regular wrench as uneven tightening will result in a warped head. A torque wrench should be used to tighten critical parts.



New gaskets should be cemented into place before valve cover is reinstalled. Use factory gaskets for this purpose or oil leaking might be aggravated. Grease gasket before replacing cover.



Replace valve cover, reconnecting breather hose. Should oil seep through gasket while driving, tighten with wrench. Do not use a wrench exceeding six inches for this purpose.



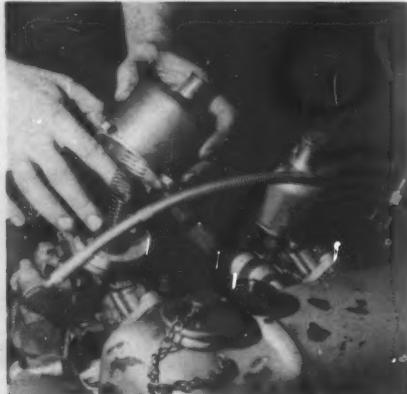
Use pressure gauge to check condition of cylinders. Place gauge firmly into spark plug hole, trip starter extension. Reading of about 130 lbs. is good. All cylinders should give the same reading.



Plugs are accurately gapped .020 to .022. Grey deposit on plug shows proper mixture. Black or white deposit indicates something is wrong. Replace plug, being careful not to mash gasket.



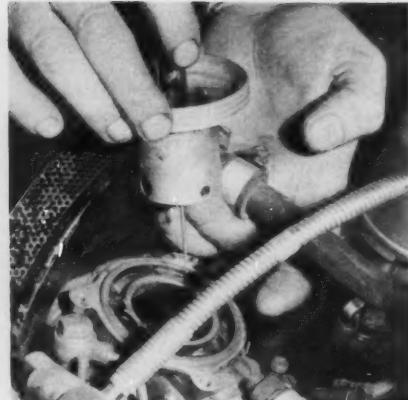
Top of carb is disassembled by removing four screws around base of bell-shaped upper casting. Screws should be placed in a parts box to prevent loss, damage or mixup.



Lift off casting and remove spring. Place spring in parts box. All operations from here on are with very delicate parts and extreme caution must be used to prevent damage.



Clean housing carefully, using a lint free rag soaked in gasoline to remove all traces of any deposits. Blow dry with compressed air if available or use clean rag.



Remove piston taking extreme care not to damage jet needle. Piston is coated with hard deposits that must be removed with a carb cleaner solution. Examine carefully for wear or damage.



With air cleaner removed (so that setting screw is accessible) small wrench should be used to set the jet. Exhaust beat should be even. Make adjustments on both carbs simultaneously.



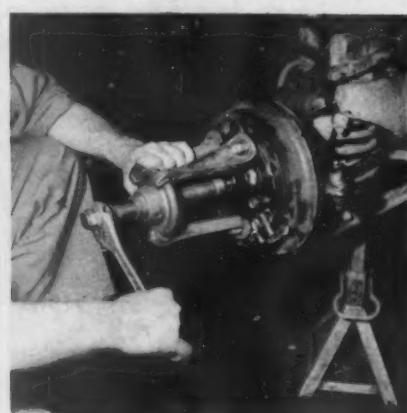
Float lever should be carefully set, using a 3/8 inch diameter rod. Bend forked prongs if improperly adjusted, but be careful not to distort neck of float lever while setting.



Pin supporting float lever can be removed and cleaned to insure smooth, free action. Binding of this pin will cause improper float level. Replace pin if any wear is apparent.



Timing light is used for final tuning after points in distributor have been cleaned and gapped. Set distributor points to .10, discarding the entire set of points if pitting is excessive.



Wheel puller must be used to remove brake drum and expose linings and front wheel bearings. Should bearing fail to come out, a separate puller must be used to remove it.



Clean the bearings in gasoline and repack them with proper grade of grease. Oil seal must be replaced after this operation so make sure that you have a set of spares on hand.

***Thorough servicing takes patience
and skill; refer to your MG service manual
when in doubt.***



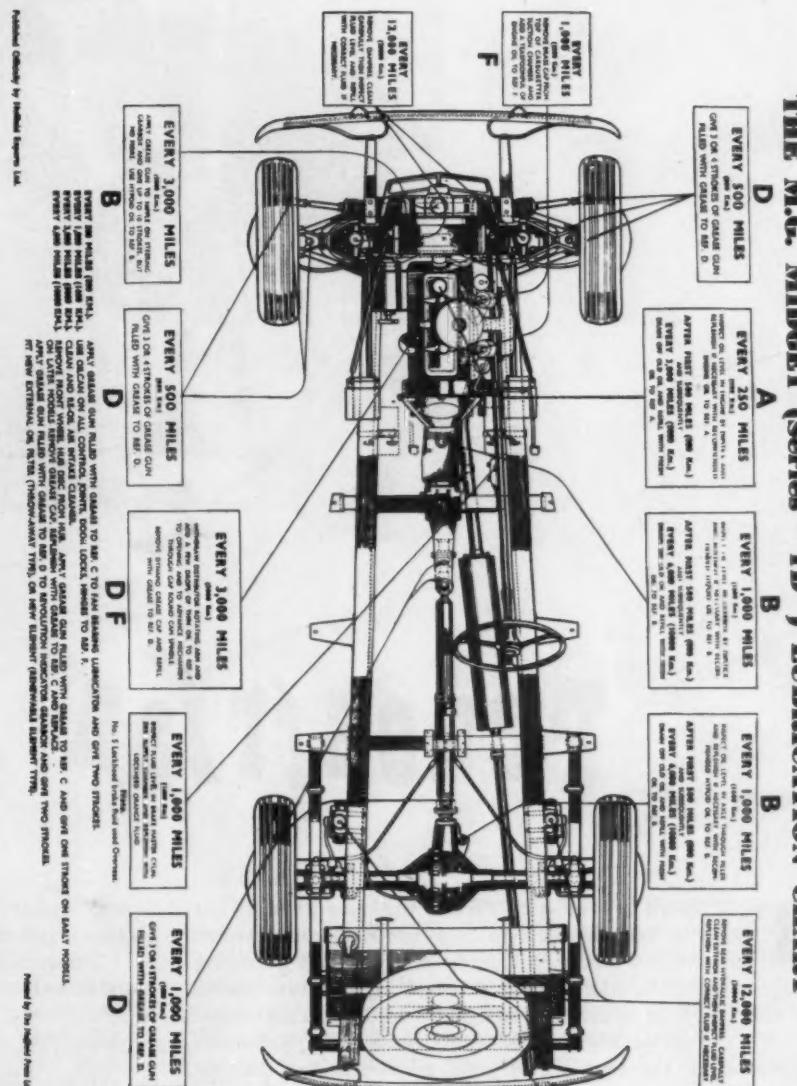
Properly cleaned unit should have a new appearance without any sort of deposit or discoloration. Tip of needle should be smooth to the touch without burrs or shoulders.

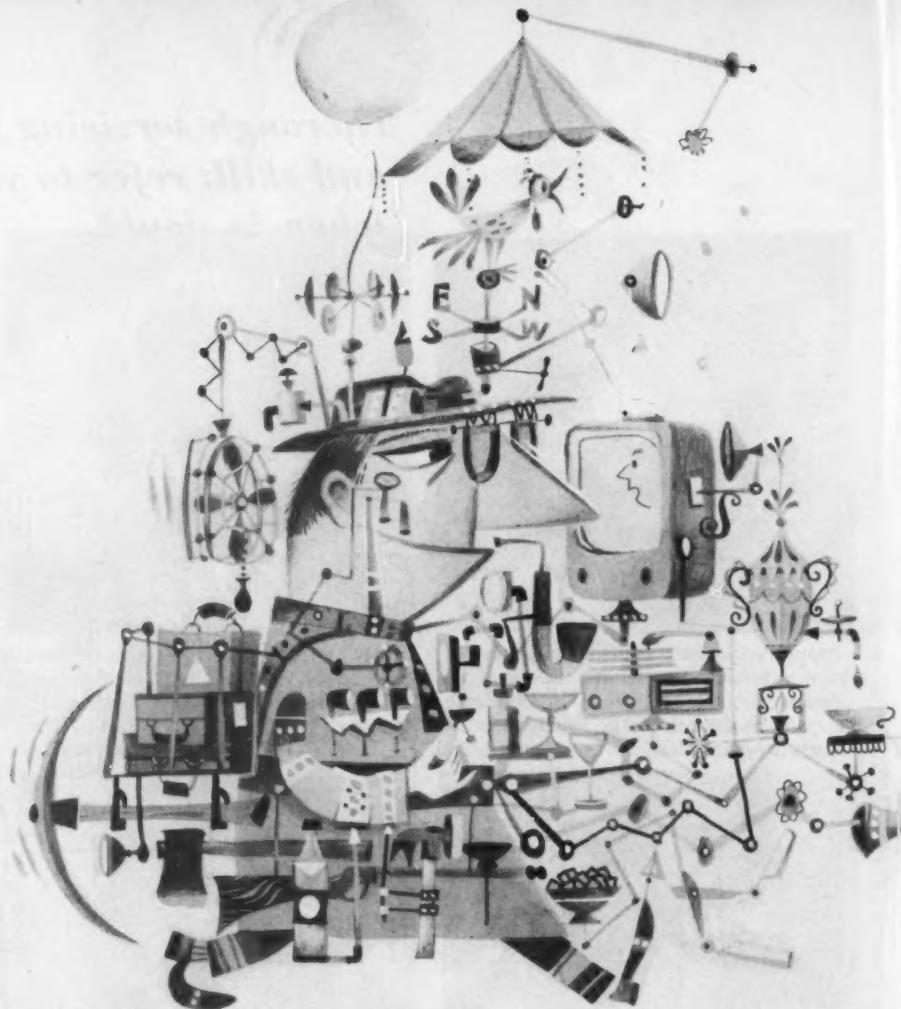


Remove filter from top of float chamber by unscrewing gas line. Filter must be cleaned often in gasoline with all sediment removed. Entire fuel system is impaired by dirty filter.



Brake adjustment is done with screwdriver by tightening drum until wheel binds and then back off. Linings on the MG can be tightened 16 clicks before linings must be replaced.





Pedestrian Show

PARIS.

THE BIGGEST news in Paris is the auto show. It has been so big that it has overshadowed preparations for another show which is now in the planning stage and which could possibly dwarf all the auto shows in the world. It is the first International Pedestrian Show. The organizer of the show is Prof. Heinrich Applebaum, inventor of the rear wheel, and a process for turning gasoline into crude oil.

We found the professor working over blueprints at the French Pedestrian Club.

He told us: "The pedestrian is definitely coming back. According to statistics, in two years there will be so many cars on the road that you won't be able to drive anywhere and you will have no alternative but to walk. At the moment there are more drivers than pedestrians, but the balance of power is in the pedestrians' favor and thus the interest in pedestrian shows is very high."

"What will you show at a pedestrian show?"

"Well, we'll display models of pedestrians from all over the world. Jaywalkers from America, newspaper readers from France, traffic-light violators from Germany, and

By ART BUCHWALD

jazzy sports models from Italy. We will concentrate on chassis and new appealing bodies.

"There will be ambulance-chasing for lawyers, bumper-endurance contests, and traffic-violating festivals.

* * *

"There will also be pedestrian accessory displays."

"What kind of accessories are there for pedestrians?"

"We have razor-bladed shoes where you can slash somebody's tire with just a slight kick, optional fluid drive which can be taken internally to give a pedestrian an extra push, and a new aluminum luggage rack which can be worn between the shoulder blades.

* * *

"We will also show the latest walking canes, umbrellas, foot lubrications and pogo sticks. There will be pedestrian blankets for cold weather, portable ashtrays that can be worn on wrists and water sprays which can be attached to eyeglasses for cleaning windshields. I think we may also expect some radical changes in rear suspension, but I'd rather not go into that now."



"What country do you think has the most to offer this year?"

"You understand I'm in charge of the whole show. I can't very well discuss the matter without hurting someone's feelings. I do think the American-type pedestrians hold the road better, the French are certainly producing the fastest pedestrians, and the Germans have the most sturdy designs. The British lead in quietness, but for all-round durability the Italians, who have the most experience dodging motor scooters, must not be overlooked."

* * *

"Will you have both male and female bodies?"

"That is the intention. The female has probably done more for the pedestrian than anybody else. Our statistics prove she is the cause of 97 per cent of the automobile accidents in a city. We expect to have female models from all over the world. It should be our biggest attraction, particularly the ones with the new-paint jobs and the hydromatic shifts."

"Will there be any discussions held during the show?"

"We expect to hold several forums concerning the status of the pedestrian. The congested state of the sidewalks of the world is becoming unbearable. Parking places such as the cafe tables along the Champs-Elysees are being given over to the automobiles, and if the trend continues the pedestrian will soon have to swing from awning to awning if he wants to get somewhere."

* * *

"Pedestrian glares will also be taken up, and useless clutching at night will receive top priority."

"It sounds like it's going to be a great show."

"I can hope to tell you it's going to be a great show. This show will put pedestrians back on their toes. That's where they should be anyway."

While we were talking, the professor received a long-distance call from Pakistan. We could only hear his end of the conversation.

"What do you mean?" the professor screamed into the phone. "He wants us to pay his fare to the Paris show? Tell him to walk here like everybody else."

Copyright, 1955, N. Y. Herald Tribune Inc.

Racing makes its own brutal demands on your tires; here are some of the problems involved . . . and some of the answers, too.

EVERYTIME you step down on the gas and let up your clutch you leave some of your tires on the roadway. During some of the tough going at competitions, drivers have been known to strip a set of tires right down to the cord during the first few laps, and then go on to drive their car (many times the fastest one entered) to a pitiful last place. They ate up every advantage they had in the pits . . . changing tires!

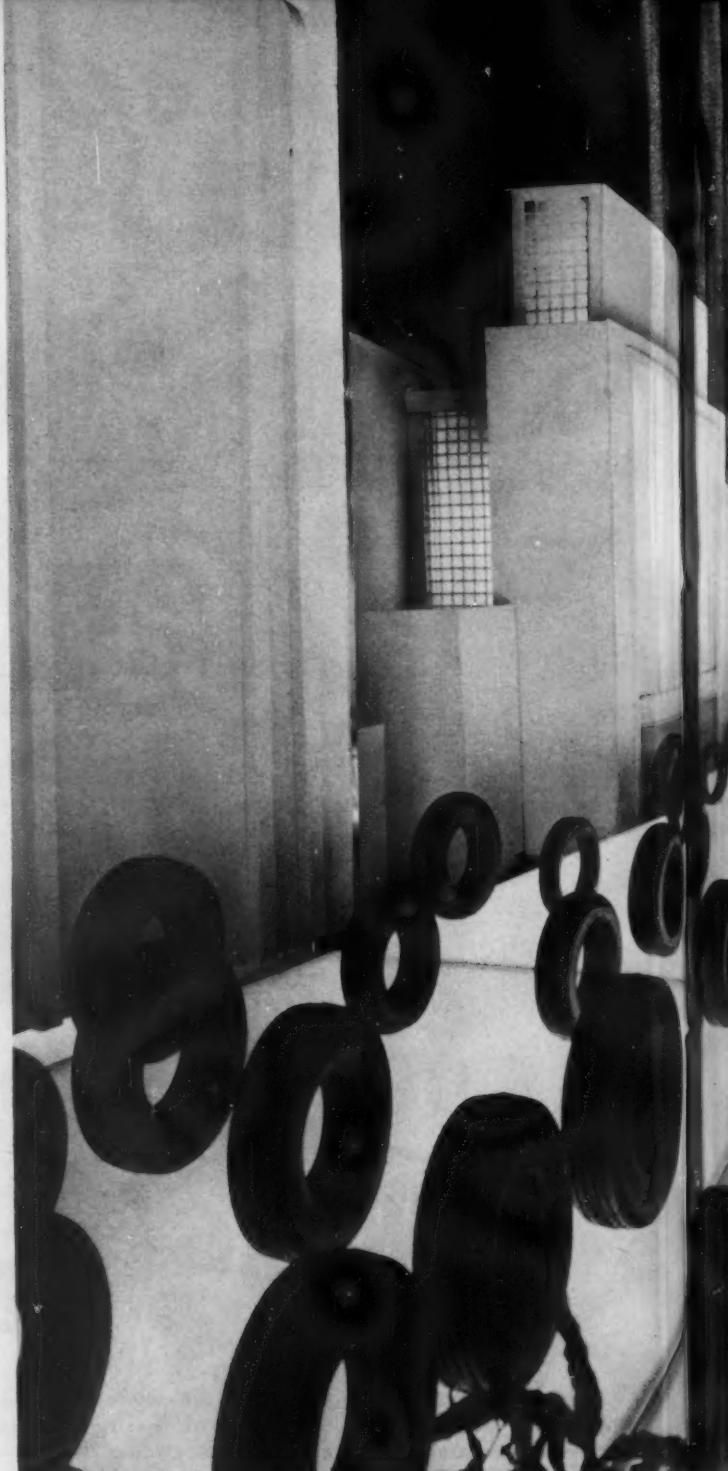
Since all the power in your engine, and all the weight of your car is delivered through your tires, they had better be of the best or you'll throw a tread, and maybe your life to the side of the road. Tire manufacturers know that the special considerations of sports and racing driving demand specialized design and testing. But there is no such thing on the market as a tire that will suit all the activities and interests of drivers, so when you choose a tire you will have to choose one that will suit your driving personality as well as the eccentricities of your car.

What are the important elements when considering tires for your car?

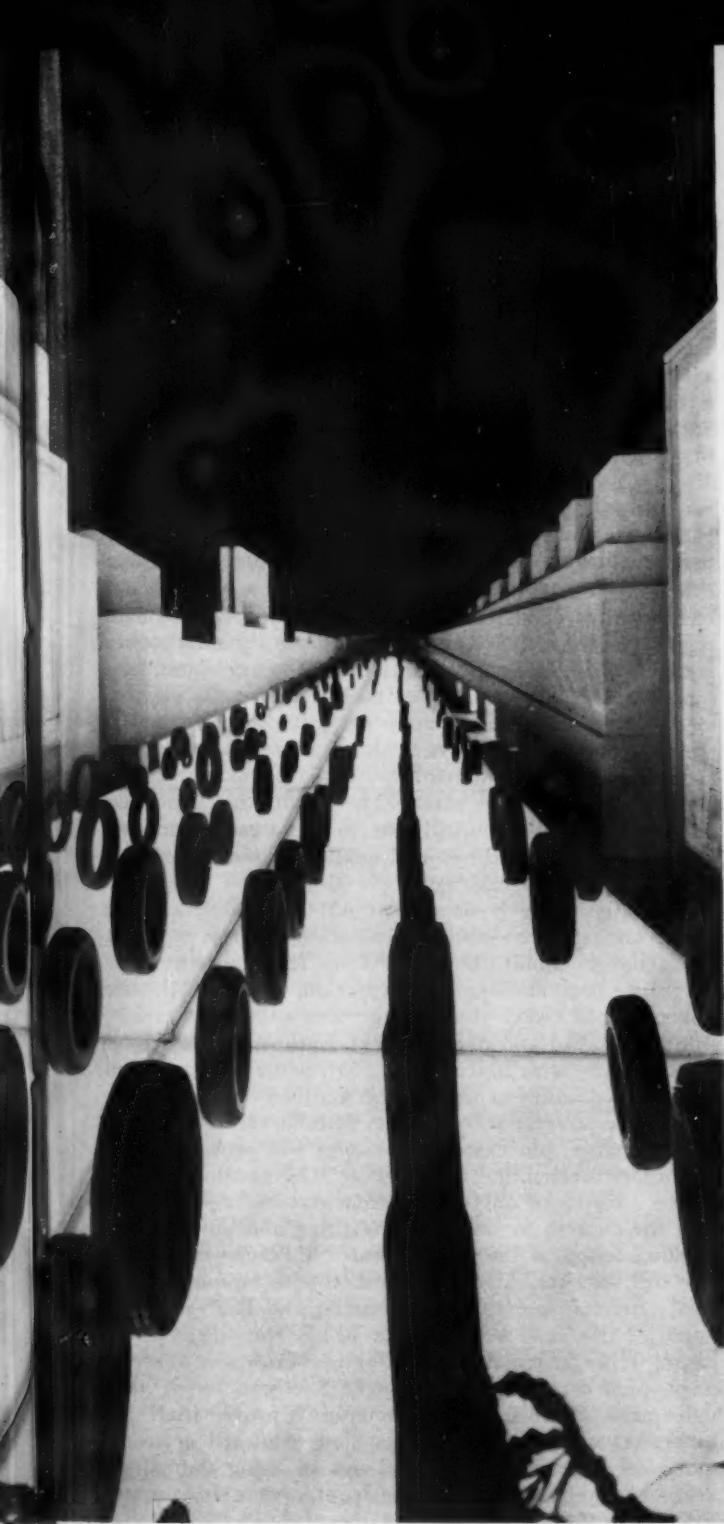
The apparently unimportant sidewall is actually one of the most critical sections of the tire. First, it determines the location and inclination of the tread surface with relation to the wheel, and thus strongly influences handling qualities. Secondly, the degree to which it bends and flexes affects the amount of heat that will be generated by the tire in use. After all, the tire functions principally as an irregularity-absorbing connection between vehicle and road, and the energy absorbed in this manner can be dispersed only as heat. High temperatures, which in racing tires can pass that of boiling water, are the arch enemy of casing construction, and will rapidly produce the deterioration of important bonds as well as of the rubber itself, leading eventually to the separation of the tread and carcass.

Heat attacks the tire . . . from the road, from the flexing of tread and sidewalls, from the compression of the tire air, and from the brakes. The most important bond in the high speed tire is that between the cord structure, or carcass, and the tread surface. Each of these components must be tailored for a distinctly different job, and yet they must live together in utter harmony. Unfortunately, the region between them is subject to the greatest concentration of heat in the whole tire. One remedial approach is to decrease the thickness of the tread. This both reduces the centrifugal forces on the

(Continued on page 24)



the well-shod



**Touring can be a trouble free
source of pleasure or an angle
iron nightmare, depending
on your tires and how
you use them.**

STEEL tires may be safe, but they make a rough ride, to put it mildly. Rubber tires with steel mesh in them may be just the answer to the need for stability, safety and speed in your family car. This is just one of the new developments in the tire field and only one of your considerations when buying tires with those long, Sunday drives with your kids and wife in mind.

Apparently simple, beneath the surface tires are tremendously complicated with plies of varying cord types crossing back and forth, and all around the casing from bead to bead.

Circumferential wires in the beads maintain the size of this inner edge, and thus keep the tire on the rim. Outside the plies of cord are bonded the rubber sidewall surfaces and the much thicker patterned tread surface. The inner tube acts only as a rubber bag to keep the air from leaking out. It is the air that is the suspension medium, and not the tire itself.

The whole casing structure is a complex of compromises, stemming from the conflicting demands of comfort and stability. On the one hand, the tread and sidewalls should be as flexible as possible, for best absorption of small and large bumps in the road. A comfortable ride in your Jaguar Mark VII, or your Hillman also calls for relatively low pressure, to make the tire "softer." For stability, on the other hand, a flat tread and a straight sidewall are in order, while higher pressure aids in achieving these. All tires, American in particular, try to strike a mean between these extremes, with extra-low-pressure tires going a bit far one way, and extra-ply and high-speed tires moving in the other direction.

Cord structure, also known as the "carcass," holds the tire together. It is failure of the carcass from heat or from violent shocks that produces many sudden blowouts, a situation which we *must* avoid in our family car. Cotton cord was long the common carcass material, but is now found only in the very cheapest second or third line tires. A great improvement was the introduction of rayon, which is found in the bulk of modern casings. No real advantage in carcass strength is gained by choosing a first-line over a second-line rayon tire. This is not the case with the nylon cord tire, which has a carcass two to three times stronger than that of rayon, justifying its premium price. In contrast, so-called

By KARL LUDVIGSEN

Bolide*

*A French term meaning "comet" that has come into common use in reference to sports cars.

(Continued on page 25)



Shredded tire is a monument to the toll racing extracts from tires. This was a new tire only 4 laps ago.



Underinflated tires are dangerous, decrease lateral control and may come off the rim during hard cornering.

(Continued from page 22)

tread and allows more rapid heat dispersion, and is usually done on tires designed for short sprints at very high speed, such as the Bonneville record runs. More prolonged use requires reasonably thick tread, however, and returns us to the dilemma.

Firestone has made progress in this field for their special racing tires, and now use a special "gum dipping" process, which saturates the individual cord fibers in the carcass before the tread is applied, thus improving the bond. Dunlop, on the other hand, has been searching for casing materials which have a high elasticity and a low degree of heat absorption, and which don't generate so much heat to begin with. The Pirelli approach has included development of cord materials and treatments that improve characteristics at high temperatures.

Completely revolutionary techniques are built into the remarkable Michelin "X" tire. Unwilling to accept the dictum that carcass structure must be the same on both tread and sidewalls, Michelin engineers have added three thin steel-mesh plies under the tread only, over an already well-planned cord structure. This mesh keeps the tread stable and flat under all conditions, and relieves the sidewalls of much of this job. The very stiff tread also refuses to develop a wave motion at high speed, and thus eliminates another source of heat and high stress. In use, the Michelin "X" tire is very sensitive and rather noisy over bumps, potholes, or what have you, but on the other hand will not break away from the road and absolutely never squeals.

More readily assessed by the sports car owner are the relative values of different tread patterns and materials. Very good traction, particularly on wet roads, is offered by tires of soft, natural rubber, such as Dunlop or Pirelli. This type of rubber also does not absorb so much heat, but it has the disadvantage of rapid wear. Much better tread life is offered by synthetic compounds as used by Firestone. Such tires wear particularly well under arduous conditions, but lack the glue-like traction of the softer foreign brands. The inclusion of carbon black in the tread compound also extends mileage, as, naturally, a thicker tread will. Remember that a heavy tread greatly increases the load on the tire structure as a whole, and may lead to tread stripping.

Mileage and adhesion are also a function of tread pattern, which is of more than trade mark importance. In the past, racing treads have tended toward the separate knobby pattern, which offers great flexibility. The very latest concepts, however, have tended to tie the tread units together so that they function with more unity. This can be seen in the experimental Dunlop tires, in the new Firestone "170," and in the Pirelli "Stelvio" as compared to the "Stella Bianca" of the same make. These patterns also show the increasing use of small slits in the tread, which enhance the tractive and wet-road qualities without removing valuable rubber for mileage.

Tire size is largely dependent on the desired gearing, but on the more powerful cars can affect the heat problem. Car designers would like to cut down tire and wheel size, to reduce the all-important unsprung weight, but tire makers would rather supply large tires with their greater ability to spread and dissipate heat. Enthusiasts may recall the very hot day at Barcelona in 1951, when too-small tires disintegrated, and lost the Spanish Grand Prix for Ferrari. Higher tire pressure also improves both lateral stability and heat resistance, but excessive pressures will provoke wheel hop under acceleration and braking. The optimum values can be ascertained only by experimentation.

In their search for improved handling and power transmission, designers long ago adopted different front and rear tire sizes for racing cars, and this technique is now used widely on sports cars. An extreme and interesting example of this is to be found on Briggs Cunningham's D Jaguar. It was originally set up for Le Mans, which, as we know, puts a premium on straight line stability at very high speeds. When it came to America, it proved itself unresponsive on our twisty courses, and exhibited a strong understeer. Alfred Momo solved this by using the softer, "stickier" Pirelli Stelvios on the front wheels, in contrast with harder Firestone "170s" on the rear. The latter also provided better wearing qualities where they were most needed.

To sum up, a softer tire tread will provide better cornering at the expense of heavier wear. A large tire with thin tread and high pressure is the best weapon against heat, but may again be inadequate from a wear standpoint. The most stable casing may never give the best ride, but the Michelin "X" is a step in the right direction. Tubeless tires have not yet entered the sports-racing arena, but Firestone says they are only waiting for suitable rims. Their introduction may complicate even further the choice of tires for the sports car.

#

(Continued from page 23)

"nylon reinforced" rayon casings are no improvement over rayon alone for stress resistance.

Four plies will be adequate for most big cars, but the station wagon owner who often takes advantage of the capacity of his vehicle may find a six ply tire worthwhile. The added plies alone do not increase the load rating; they rather allow the use of higher air pressures to support the weight. Similarly, larger section or larger diameter tires allow more air to be carried, thus also raising load possibilities.

Tire mileage and roadholding are bound up with tread thickness and design, which in turn are again subject to compromise. A thick tread will yield better mileage, but due to its greater weight is more likely to be thrown bodily from the carcass at extremely high speeds. Since we intend more "touring" than speeding when with our family we need not worry about this. Also, the extra price of a first-line tire is repaid in the form of proportionally better mileage, as a result of thicker tread surfacing. It seems possible that this extra rubber in the mold may be responsible for the malady of "out-of-roundness" that occasionally is found in premium tires, as well as on some original-equipment casings. This fault can be cured only by trimming down the tread on a special machine.

Tread patterns are usually a variation of the "zig-zag" theme, which combine forward traction with lateral resistance in the most economical manner. Some investigations have indicated that tire squeal is caused by vibration of the outside tread rib, and the quietest tires may be those with wide outer ribs or with lateral connecting tread links. Extreme treads, for winter use, give some help on rough ice or loose snow but are worthless on glare ice.

Many tubes are marketed with claims to self-sealing and extra-safe properties. A nylon-reinforced tube, used with a conventional rayon casing, offers remarkably good resistance to rupture from shock or excess heat, and can actually approach a nylon tire in this respect. No tube will physically resist a puncture, but a modern butyl rubber tube is quite effective as a non-tearing seal around an intruding nail. For a better seal, inner tubes are available with an extra sealing compound around the tread circumference, but it must be recalled that these tubes are heavier than standard and more difficult to balance, due to the fluid nature of the sealant. Also, they will eventually have to be patched anyway.

The tubeless tire is relatively new on the motoring scene, but is clearly here to stay. Developed to its present form by the B. F. Goodrich Company, it combines the better features of the casing and tube, and sells for about the same price as the combination. Its main advantage is that it avoids the maladies of the separate tube, such as pinching and pinholing. The tubeless unit is lighter in weight and reduces heat buildup, and its inner lining can make a "slowout" out of a puncture. Clever merchandising has made the tubeless tire synonymous with self-sealing, and this can be attributed to the originators, whose sales department suggested that a sealing compound be included in their tire. Such a compound has all the disadvantages of the above-mentioned self-sealing tubes, and it is significant that Firestone's new tubeless, nylon "500" tire for high speed and hard use does not employ a sealant.



Steel wire criss-crossed throughout the tread is a new development, providing strength to the tread while retaining sidewall flexibility.

Thorough testing, both public and private, has proved that the tubeless tire will stay on the rim and hold air under the most arduous conditions. This presupposes a rim and tire bead in very good condition, free from dents, rust, scrapes or bruises. It must be kept in mind that a puncture in any tubeless tire will eventually have to be repaired, and techniques for this job are still relatively complex and not widely understood.

A glimpse at the near future is provided by U. S. Rubber's XP-140 tire, for limited production. Suitable for speeds up to 140 miles per hour, this tubeless creation weighs five pounds less than comparable ordinary tires, and has a special narrow tread pattern.

This company has also developed and are just putting on the market tires with steel wire in filaments as thin as human hair, and as strong as that in bridge cable. Because this steel will tend to conduct heat away from the tread area the tire will run from 20 to 40 degrees cooler. U. S. Rubber also claims that 40% more mileage can be obtained from the tire. Tread throwing is minimized because the steel is unified with the textile cords in a permanent bond. This tire and the other improvements that the companies are working on suggest that our heavier family car with its special concerns of safety and comfort may be treated to bursts of speed without endangering our passengers.

Both the sports and the roomier models need these air filled rubber sacks to preserve your life and give you the fun you want from your car. If you take advantage of the new developments in tires, and consider your personal needs, and your car's characteristics, you can not help but obtain safety, comfort, and speed on the rubber road. #



SCI

Previews

the new

Two-point-four

Jaguar

JAGUARS have always been an enigma. The XK-140 is a king among sports cars, while the Mark VII has served well as a high speed touring machine. The medium-sized car has been virtually ignored by the Jaguar Company in spite of the tremendous demand for this type of vehicle. However, if you shout long and loud enough, someone is bound to hear you, and so the new 2.4 litre Jaguar saloon came about.

Here is a completely new car designed as a small and powerful family car, far more maneuverable than the Mark VII and with greater seating capacity than the XK series. It fills a yearning long felt by the family or conservative businessman for a "more practical" XK.

The new 2.4 litre is based on a unit body, that is, all sections are welded together to form a rigid unit. To compensate for the various cut out areas which have a weakening effect structurally, two box type members are welded to the floor, giving greater torsional strength and keeping the body panels from vibrating in synchronization with road noises. The entire body is well re-enforced with special box members front and rear. Stiffening is so well accomplished that this new 2.4 litre Jaguar should fare pretty well in a free fall off a cliff.

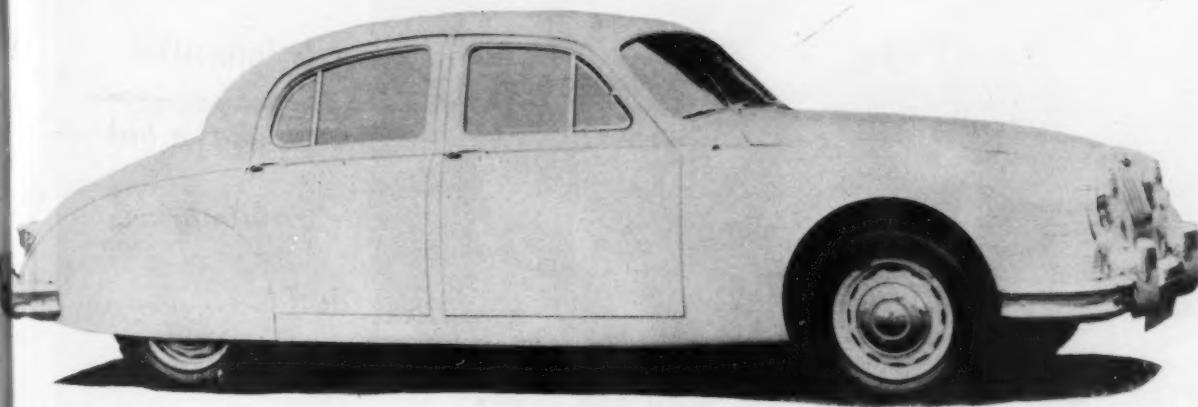
Obviously great pains have been taken to make this new car one of the quietest on the road. Sound deadening material has been fitted to just about every source of vibration with special considerations being given to the suspension

and its role in sound transmission. Rubber bushings are used throughout the front suspension, and noise transmission through the steering column has been eliminated by the use of universals in the column.

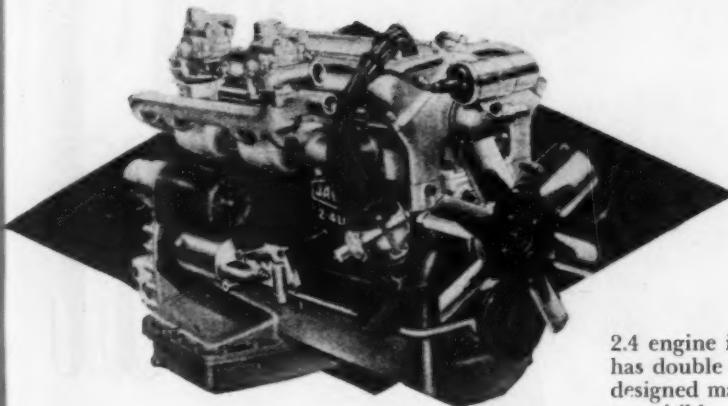
The front suspension is made of two unequal rear inclined wishbones with the lower component being the longer one. The lower units are forged while the upper wishbones are stamped. Pivot points are universal ball type actuated through a Burman steering box by means of a three piece track rod. The track rod is rubber bushed as are the front roll bar and the inner end of the wishbones, leaving only nine grease points in the entire front end assembly. This trend toward service simplification is quite welcome in this newest of Jaguar sedans.

The new engine has a number of definite improvements incorporated into its design aside from the obvious advantage of interchangeability of certain parts with the XK series engines. This 6 cyl. 2.4 powerplant is oversquare, having a bore (83mm) greater than its stroke (76.5mm). This short stroke design means that the pistons travel a shorter distance through each cycle with a resultant increase in engine life. The bore is identical to that of the 3½ litre engines with greater smoothness and flexibility, a natural outcome of the use of six cylinders instead of the four that were originally contemplated.

Power transmission system is through a single plate clutch into a four speed gearbox fully synchromesh in all



The new Jaguar's silhouette is reminiscent of the front of the XK-140 combined with the rear of the Mark VII. Note heavy wrap-around bumpers.



2.4 engine is oversquare and has double overhead cams. Newly designed manifolds and overdrive are visible.

speeds. Laycock De Normanville overdrive may be had as an optional accessory at additional cost.

Interior is luxurious in the Jaguar tradition with walnut paneling and finely fitted leather used throughout. Roominess is what the British term "full width," and in the new Jaguar this means having a front seat that measures 56 inches and a rear seat that measures 57 inches. This approaches measurements of some American cars and can be considered more than adequate for even the longest trips. Total glass area has been increased over the Mark VII to give better visibility in all directions.

The new 2.4 Jaguar is available in special and standard models, both cars being basically the same except for details and accessories such as tachometer, clock, and cigar lighter, folding arm rests, twin fog lamps, and even windshield washers. The trunk is quite spacious with the spare tire fitting into a recess in the trunk floor and covered by a hinged flap. Without doubt, the 2.4 has been carefully designed for high speed, long distance touring.

The new 2.4 Jaguar may well be the end of the search for the man who is looking for fine workmanship, good handling, and top speeds touching on the one hundred mile an hour mark, with plenty of room for the family and luggage.

It looks as though the new 2.4 litre Jaguar will be with us a long time, setting a new standard for high performance touring cars in the \$3500 class.

#

specifications

Engine

Cylinders	6
Bore	83mm
Stroke	76.5mm
Displacement	2,483cc
Valves	DOHC
Compression Ratio	8:1
Max. Brake H.P.	112
Piston Speed	2,880 ft./min.
Carb	Twin Solex
Electrical System	12 volt

Transmission

Clutch	12 in. Borg & Beck single dry plate
Gear Ratios	15.35, 9.01, 6.22, 4.55

Chassis

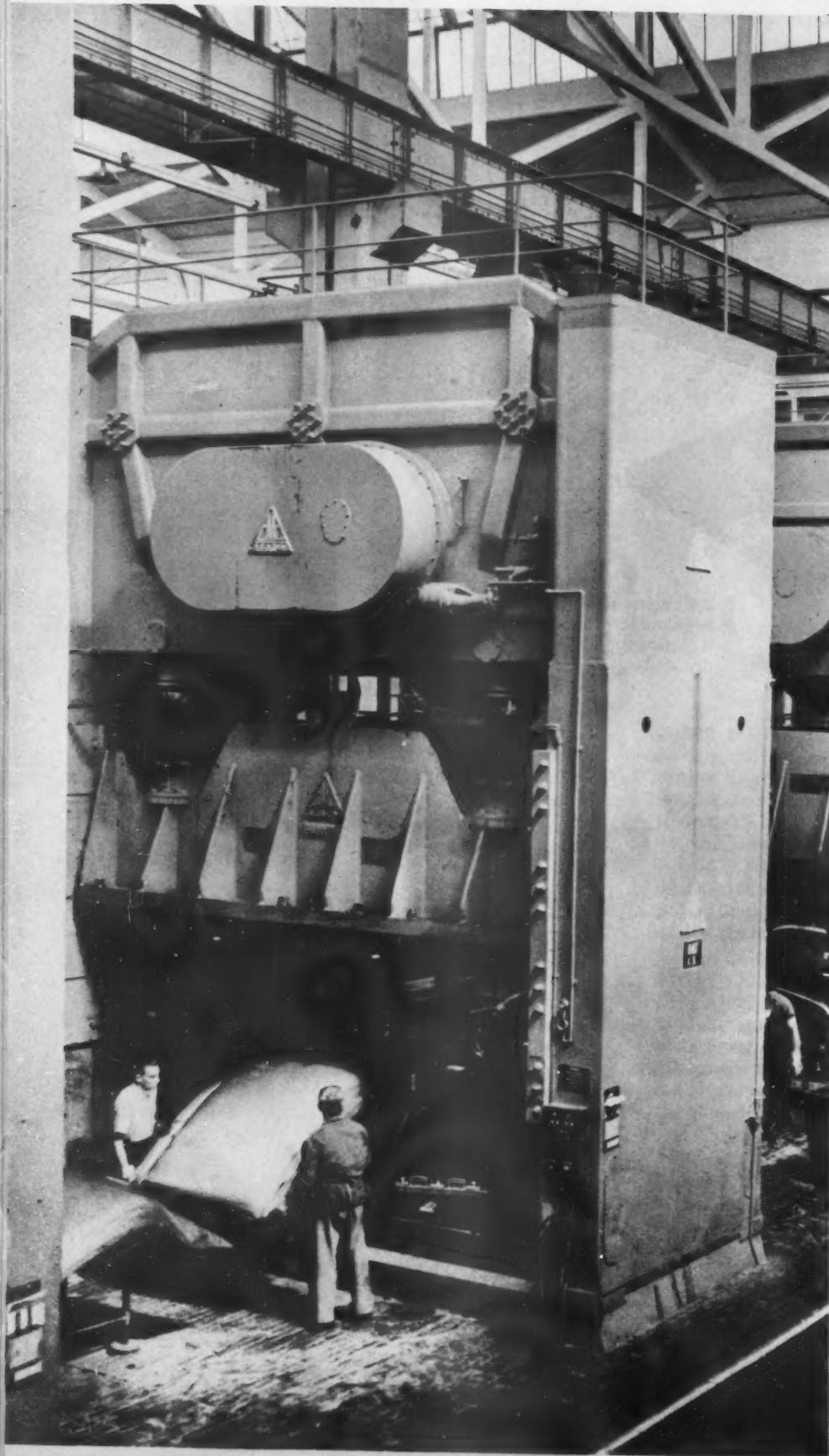
Suspension	Ind. front, Cantilever rear
Steering	Ball (Burman)
Shocks	Girling Tele.
Brakes	11 in. Diam., 157 sq. in.

Dimensions

Wheelbase	8 ft. 11 in.
Length	15 ft.
Width	5 ft. 6 in.
Height	4 ft. 9½ in.

*Italy's industrial
giant makes a bid
for world markets
with the*

Fiat

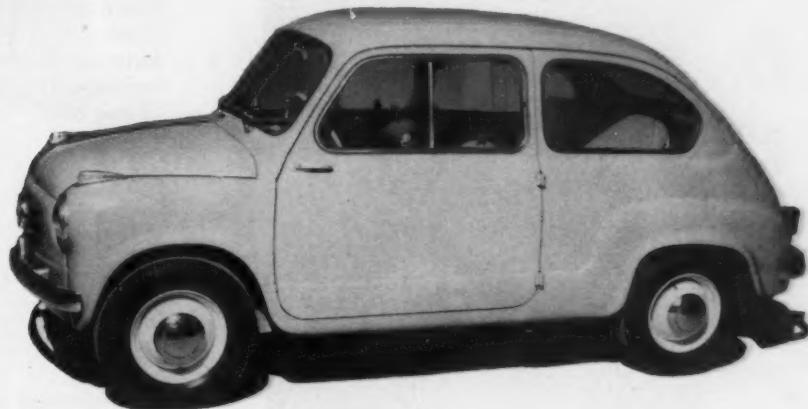


Massive hydraulic stamping machines are used to form Fiat's basic body parts. Mirafiori factories in Turin are now approaching the one thousand car per day capacity for which they were designed.



Jigs are used to properly position body sections for initial spot welding. Bodies are then placed on an assembly line belt for final welding. Six workers take four minutes to do initial weld.

600



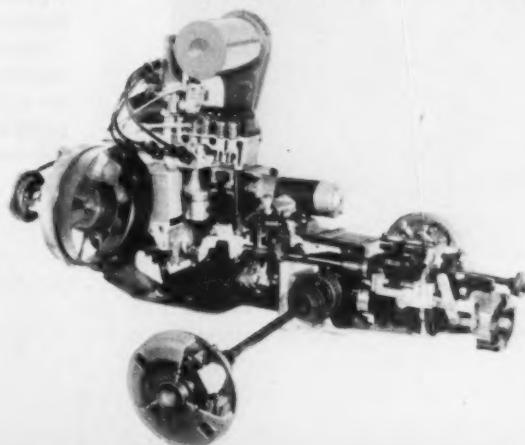
WHEN an industrial giant such as the 57 year old Fiat firm produces family cars that sell for less than \$1,200, and produces them at the rate of 1,000 a day, you can be sure that something unusual is in the wind. This is exactly the case with the new Fiat 600. Designed to be mass produced at the lowest possible production costs, it is in retaliation for the fantastic success of the Volkswagen, which has been steadily capturing the world markets and hitting Fiat where they live, in the pocket-book.

Fiat is sort of an Italian General Motors in that they dominate the entire industrial tempo of Italy, producing just about everything that runs. The motto "land, sea and air" isn't just an idle boast. Many an F-86 Sabrejet, flown by NATO pilots, was produced in entirety at one of the 20 Fiat plants. In spite of Fiat's diversified interest, 88% of their sales volume is dependent on their automotive

industry. They are not only set on maintaining their position in the face of the brutal German and British competition—they are out to lead the field. Let's take a look at the car on which most of the Fiat hopes are placed.

The Fiat 600 is not a new or revolutionary design. But it is a relatively clever and practical wedding of very sound components, assembled and manufactured at a low price and still resulting in a tough, good handling little package. This is the first time Fiat has produced a rear engined car, taking their lead for VW and Renault. The obvious advantage of eliminating the propeller shaft and rear axle housing results in considerable saving in weight and bulk, making the installation and assembly of the rear independent suspension much simpler and cheaper. The 683cc overhead valve engine is water cooled, the radiator being located at the side of the engine and fed by a fan mounted on the pump spindle. This little 4 cyl mixmaster, having a

Fiat's 600cc engine is water cooled. Fan forces air into radiator and is driven by pulley to the car's flywheel. Note direct linkage of crankshaft to the rear end.



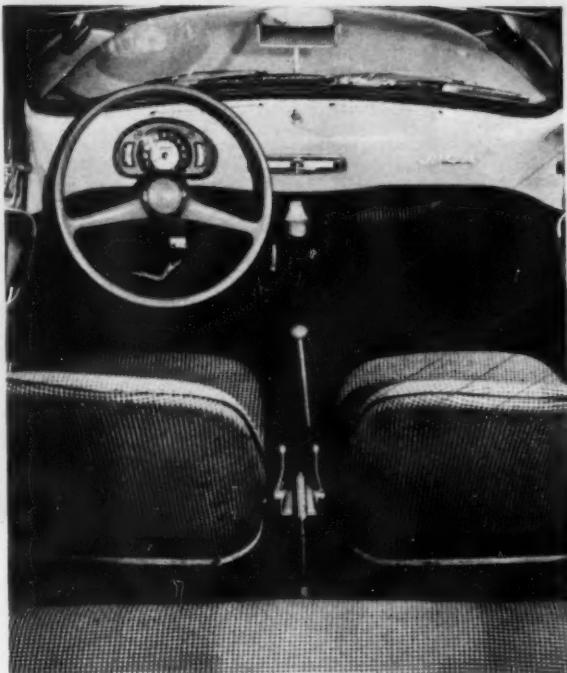


Skilled foreman has control of every operation in the Fiat plant. Berating worker, he instructs her in the proper techniques for the production of the 600.

Top stampings are neatly piled after leaving the hydraulic press before being placed on the production line for final fitting to the side panels.

compression ratio of 7:1, will rev to 4600 rpm, turning out 21.5 bhp., hitting a top speed of about 60 mph and cruising indefinitely between 45 and 50. The Fiat 600 makes up for its grossly unspectacular performance by offering really good roadholding. Putting it the simplest way, this car's independent suspension makes it stick to the road like glue. Europe's twisting mountain roads make roadability a far more important performance feature than pure straightaway acceleration or top speed. A stabilizer bar on the rear suspension really helps matters of cornering, while a transverse leaf spring does the same for the front end.

Manufactured in separate sections, the entire body unit is welded together to form one integral unit which should provide years of rattle free service. This monocoque type of construction precludes the need for a separate chassis, the components being fitted directly to the body. General



Interior is neat and simple.
Good taste is achieved by
using a minimum of decorative
components skillfully placed.

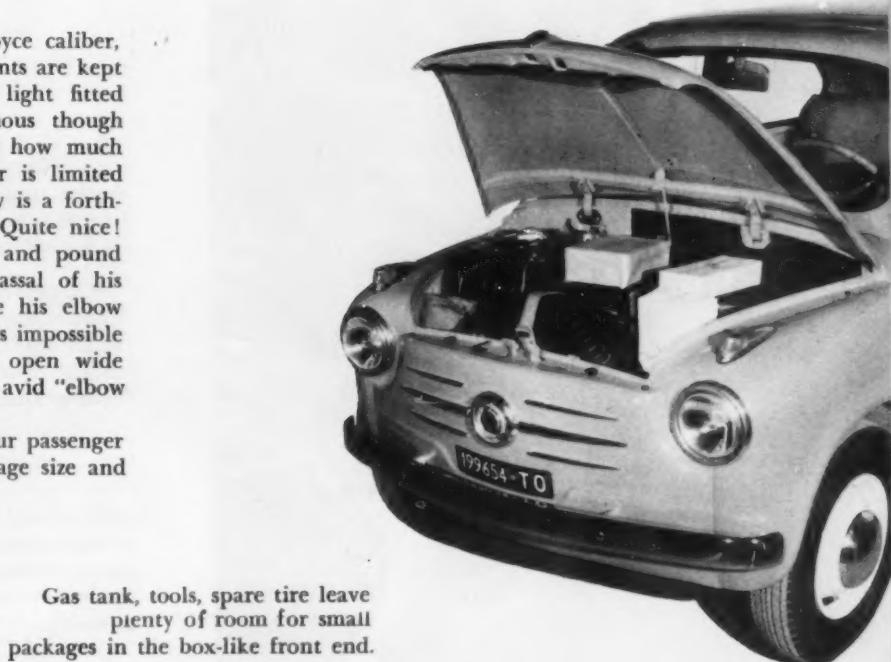
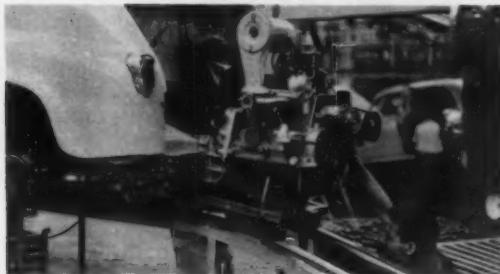


Overhead hoists carry sections
to assembly line. Here four
workers fit roof to sides as sections
nearby await the next chassis.

body finish, while not being of the Rolls Royce caliber, is neat, though a bit stark. Interior appointments are kept to a bare minimum, with the "make up" light fitted to the rear view mirror being an incongruous though welcome bit of luxury. It's rather surprising how much good taste can be exercised when a designer is limited to a minimum of components. The upholstery is a forthright woolen fabric in a hounds-tooth check. Quite nice! Windows slide open . . . this is penny wise and pound foolish. The average American driver is a vassal of his habits, one of which is to luxuriously drape his elbow through an open window while driving. This is impossible with the Fiat 600. The window just won't open wide enough, and even if it did it's too high for the avid "elbow draper."

The Fiat 600 might well be considered a four passenger car, provided the four passengers are of average size and

Engine is pushed up ramp on
wheeled cart by hand. Second
worker completes union of engine
to rear end, and bolts it into place.



Gas tank, tools, spare tire leave
plenty of room for small
packages in the box-like front end.



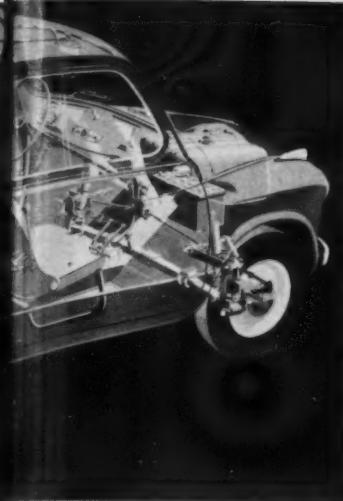
Small, neat, clean the rear power unit is easily accessible and simply maintained with the fewest of tools.



the distance being traveled is not too long. Four six footers wouldn't be too comfortable in these rather tight quarters, but as a rule it isn't too often that you get four six footers together at the same time.

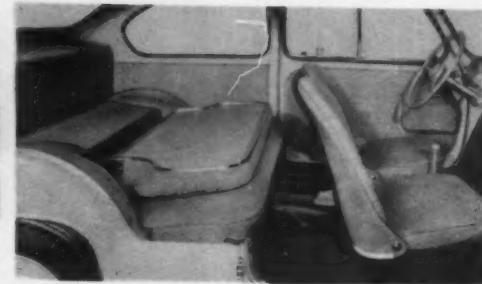
Luggage space is also rather sparse, a bit goes in the front and a bit goes in the back. All in all, you can get in enough for most everyday purposes and there might be enough room for a vacation for two. Europeans seem to have a knack for getting an entire family into this tight

Difficult welds and cutting operations must be done by special welder who cleans up final operations on body assembly.



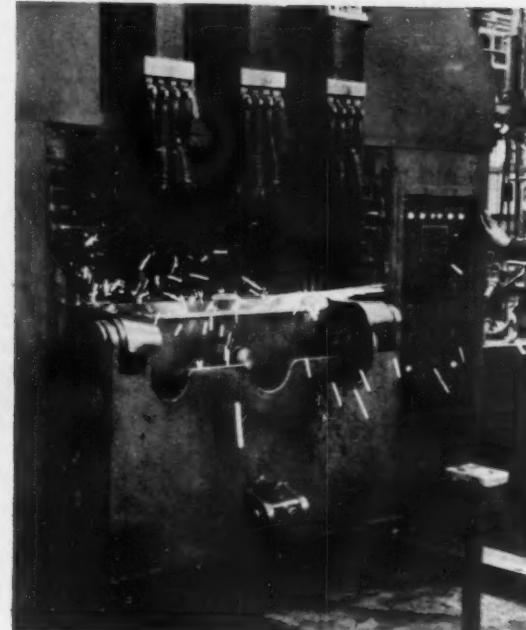
First Fiat was produced in 1899. Newest Fiat 600 is pictured in diagrammatic drawing at left. The Fiat plants now employ more than 71,000 workers as compared to six in 1899

Folding rear seat gives greater luggage space with easier loading and unloading of suitcases. Pillows placed on folded rear seat makes bed for child.



little island, and can fit enough luggage on the roof to last almost indefinite periods.

The Fiat is probably the most "bodied" car in the world in that just about every coachbuilder of any note has done literally dozens of body variations on the tough little chassis with the economical (39.2mpg) little workhorse engine. If Fiat can learn American advertising methods with the same thoroughness that they have learned our production methods, we might well see the establishment of the Fiat 600 as a common sight on the American road. #



Newest equipment is this spot welding machine which can make twenty welds simultaneously, requiring only one operator.

durable

duffel

AS a blonde clings to a mink coat, veterans of the Second World War clung to their duffel coats on their return to civilian life.

The original duffel coat was specifically designed to withstand the icy winds of the Atlantic when convoys from Britain had to take the long, roundabout route to Russia. But the coat proved so practical and popular that its use spread to the other branches of the services, and by war's end it was too firmly established a favorite to be jettisoned.

Now the original duffel coat has been streamlined, embellished, and generally spruced up. Strictly speaking, some of them aren't duffel coats any longer—duffel is the name of the coarse woolen cloth with a thick nap the originals were made of—which, in turn, was named after Duffel, a town near Antwerp in Belgium.

However, in the streamlining process the term "duffel" or "duffer," as it is sometimes called, is now being generally applied to almost any coat that's too short for an overcoat, too long for a jacket, and isn't designed to fasten with plebeian buttons and buttonholes.

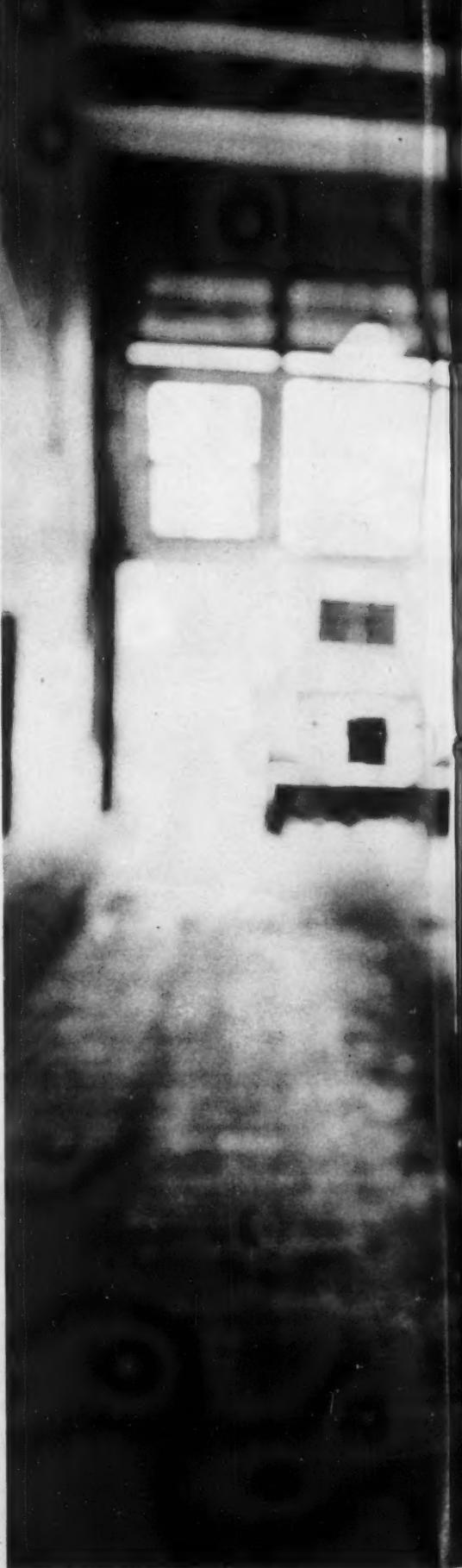
The particular one that's being shown off here is made of waterproof poplin, and is warmly lined with sheared wool as soft as fur. It has a hood which the wise sports car fan will keep tucked into the specially designed place at the coat collar, between the outer fabric and the lining, in readiness for the really cold weather. Some manufacturers use thick toggles of plastic for fasteners instead of the original wooden ones; some coats have quilted linings, and others are lined with fur fabric.

Duffel coats sell today for anything from \$20 to \$50, and along with the niceties and refinements of design, the original worth of the duffel coat remains—it's still as warm as toast and about the best windbreaker we can think of. And even if you are minus a sports car, we think a duffel coat would look distinctly handsome anywhere, Madison Avenue included.

#

By LOIS DE BANZIE

Photograph by Lester Bookbinder at J. S. Nichols Company





Warm, waterproof, and smart, duffel coats are right, in and out of sports cars.





selling and trading



*Getting the best price for your
car takes patience, a bit of
work, and a lot of initiative.*

SURPRISINGLY enough, the first consideration may be, *should you sell it at all?* Perhaps your car, like MG TC's or current Volkswagens, is on a plateau of depreciation. In this case the decline in value, if you keep the car for an additional year or so, may be a lot less than the first year's depreciation of a new model. This is especially true if your car is driven moderately and is well maintained. If this is the case, keeping your present car will allow you to save your dough in the interim, draw interest on it, and make a bigger down payment with the consequence of reduced financing charges. For example, a mint TC that brought \$1,000 in the spring of '54 seldom sold for less than \$900 last year. That brings the cost of ownership, excluding running expenses and possible repairs, to \$8.33 per month . . . or little more than bus fare and shoe leather.

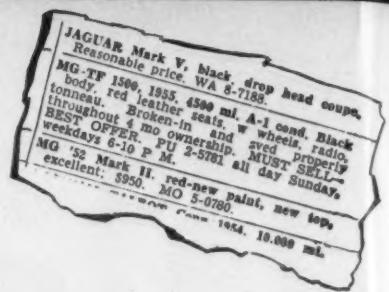
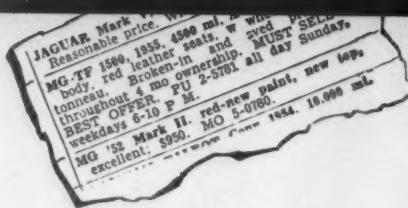
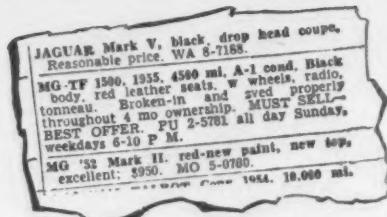
But let's say that you must sell. Possibly, old devil stork has put the Indian sign on your two-seater. If you are a married man, remember that the little guys in three-cornered pants have unseated more sports car drivers than ess turns or hay bales ever will!

You have lots of factors to consider.

1. *When to Sell.* Timing is even more important in planning to sell a sports car than it is for a conventional sedan. In almost all areas except California and the Florida-Gulf Coast region, demand for sports cars, with their minimum of protected luggage space and drafty side screens, is sharply seasonal. This is particularly true around the big northern cities where the cost of garaging a sports car through the

g your foreign car

By JIM WHIPPLE



rough winter months is an expense the used car buyer may well avoid.

The first whiff of balmy spring air in mid-March, and the sight of the first top-down convertible on the streets mark the beginning of the optimum selling season. April, May and June are the peak months. Buyers thin out and tend to get selective for the balance of the summer. And with so many European automakers timing their new model introductions to match the U.S. new car debuts, a steeper rate of depreciation begins in late summer. A minor exception to the fall slump may be the case of college students eager for a "sports job" to horse around in on football week-ends. However, the college buyer who can't afford a new car, is liable to be strapped for dough, and thus have a bearish effect on the market.

So, if possible, hold on 'till spring. It will be hardest for buyers to resist your "mint" '52 TD on a balmy Saturday afternoon in May, with the side screens stowed and the tonneau cover neatly buttoned down.

Somehow after a brisk run through the open country, your prospect will be really smitten by "the bug" and will be less critical of the depth of tread on your Dunlops or the condition of the battery, and more able to "find" \$1,100 than he was to dig up \$950 back in November.

2. Find the Market. If you live in coastal California, greater Chicago, or the east coast from Boston to Washington, D.C., potential buyers will fall out of the trees, if your car is sound and the price is right. Selling your car in Atlanta, Denver, St. Louis, Cleveland or New Orleans will be a bit tougher, you'll have to advertise oftener and wait longer between nibbles.

If you're located in Swampwater, Alabama, or Muskeg, Montana, you already know that you are one of two, (or perhaps the only) enthusiast in town with "one of them crazy furrin' cars." In such cases you've got to find the buyer and take the car to him. Your best bet is to advertise your car in the nearest big metropolitan city. Take pains to make your description accurate and make it easy for the prospect to contact you by phone (collect). You will have to make your price attractive too (see below).

If you are lucky your ad will be answered by an eager beaver in a nearby whistle stop who is nearer to you than to the big city markets. In this case keep your telephone sales pitch on the level and drive over to see him. Another way to locate these out-of-the-way buyers is to place an ad in a sports car magazine. When you locate a prospect in the boondocks be ready to take less than the going market average for your car in order to close the sale, or else you'll have to spend a lot of time and mileage hunting for a buyer at your asking price.

3. Study the Market. This is the key operation in whatever deal you are contemplating, be it trade-in, sale to a dealer or private transaction. Unlike the domestic automobile market, there's no formal "Blue Book" to peg prices for every year and model. The used sports car market is strictly a supply and demand situation with some interesting twists all its

own. In selling a two-year old MG for example, I discovered a price spread of \$650. Bottom offer was \$850 cash purchase from a dealer, the top, a private sale at \$1500. So, following the path of least resistance may be very expensive.

Best way to study the market is to follow ads for your make and year of car in the Classified Used Car columns of a big metropolitan newspaper. Check further in the "For Sale" columns of a couple of sports car magazines too. If it's convenient, answer a few ads for cars where the description of mileage, condition and equipment matches your most favorable estimate of your car's condition. Don't be afraid to "shop" some of these cars even to the point of a trial drive and some fairly serious haggling over the price. Don't hesitate to try this shopping around. Everyone selling a car privately should learn the give and take of polite horse trading. Be a good sport however and don't keep your "dry run" seller on the hook, after all, you're going to sell your car, not buy his. If you lead him to believe that you are seriously interested he may miss a bona fide proposition.

Follow the cars that you shop. Do the same cars appear in the classified columns week after week at the same price? If so, the price is above the going market. A word about dealers' prices; they will almost always be higher than the price you will get for your car. There are several good reasons for this. First of all, many reputable dealers offer some sort of a guarantee which is a comforting reassurance to buyers. Then, too, dealers are equipped to offer credit terms. (Banks are more reluctant to float loans on many foreign cars because the resale market is too limited and specialized.) Also a dealer with well-equipped and manned service facilities can "recondition" a car more thoroughly and professionally than a private owner.

However, if your sports car is really and truly "mint," and its condition can be appreciated by a sharp buyer who really knows his cars, be patient and wait for the connoisseur. He will pay you nearly as much as the dealer is asking for an equivalent "buy."

After a month or two of spotting cars and shopping them via classified ads and dealer's listings, you should have a pretty close estimation of your car's market value. Remember, however, if you aren't really close to the market you will have to offer the buyer an inducement of a slightly lower than average price to persuade him to wait 'till you can bring the car to him or he can come to you.

This is especially true if your car is of a popular marque and numbers are continually being advertised. If you have an exotic "collector's item" on your hands like a Model 57 Bugatti, you can coax prospects into your own backyard without shaving the price. When you've pegged your price, give or take \$50, you are ready to put your "bolide" on the block.

4. Trade or Outright Sale. If your reason for selling is need for cold cash or the contemplated purchase of new or used "Detroit Iron," stay away from outright sale to a dealer. In such cases the dealer is acting as a middle man pure and simple between you and the ultimate private buyer of your car.

body throughout. BEST OFFER 4 mo. weekdays 6-10 P.M.
MG '52 Mark II. red-new paint, excellent: 5950. MO 5-0780. 1954. 10,000 mi.

JAGUAR Mark V, black drop head coupe, reasonable price. WA 6-7188.
MG-TF 1500, 1955, 4500 mi. A-1 cond. Black body, red leather seats, W-wheels, radio, tonneau. Broken-in and swed properly throughout. 4 mo ownership. MUST SELL. BEST OFFER. PU 2-5781 all day Sunday.
MG '52 Mark II, red-new paint, new top, excellent: 5950. MO 5-0780. 1954. 10,000 mi.

MG-TF body, red-new paint, tonneau. BEST OFFER 4 mo. weekdays 6-10 P.M. 2-5781
MG '52 Mark II, red-new paint, excellent: 5950. MO 5-0780. 1954.

Naturally the dealer demands recompense in the way of price spread for his risk in tying up capital in your car. He's got to pay himself interest on the money he puts into the car, as well as pay for storage, insurance, servicing and reconditioning, and selling expenses (advertising and salesman's commission). On top of these items he adds profit, for after all he's in to make money even as you and I! A private sale of a car in reasonably good condition should bring you an average of 25% more than Jolly Joe's "Top Dollar."

Trading for a new sports car can be a different proposition if you are trading a highly popular sports car in basically good condition for a higher-priced model. For example a '52 MG turned in on a new Austin-Healey should bring about the same price as on a private sale. The dealer can cushion any risk or expense involved in resale of the MG in the higher profit margin he makes on the new A-H.

As a general rule, however, it will be worth your while to attempt a private sale before you accept the dealer's offer on your car. Incidentally, shop more than one dealer for the best trade-in too.

5. Selling to Friends. The ground rule on this one is an emphatic "No!" Never jeopardize a good friendship by trusting to the capricious condition of complicated machinery. Even the best of friends will subconsciously expect you to give him a "break," which may mean shading the price \$50 below the market. Instead, deny your pal the opportunity of buying your "jewel," sell it for whatever the traffic will bear and present your pal with a consolation prize of a fifth of good Scotch.

6. Conditioning the Car: Here's where a moderate amount of effort pays off. The same principles regarding appearance applied in prettying up a conventional car go double in the case of a sports car. The prospect is looking at your car only because he can't afford a brand new bomb. Thus the nearer to "showroom condition," the higher you can edge the price. A good wash, plus conscientious application of cleaner and polish is mandatory. Steam cleaning or gunking the engine helps to give the impression of mechanical excellence and is worthwhile. Saddlesoap on the upholstery and elbow grease on the chrome helps too. A pressure spray can of aluminum paint will remake your dingy wire wheels into a potent "plus." Don't worry too much about small scratches, but have major dents ironed out and painted professionally.

Attention should be paid to mechanical "housekeeping" too. Adjust brakes and clutch to eliminate sloppy action. A recent lubrication job will work wonders in smoothing out the steering action. Adjust your valve tappets to proper clearance, lubricate that noisy speedometer or tachometer cable, and "balance" the carburetors.

A set of new (or newly cleaned and adjusted) plugs, plus properly faced and gapped distributor points will put a good deal of snap back into a lackadaisical engine. If the car has wandering tendencies and steers erratically, spend a few dollars for a front end alignment. Faulty operation of any one part may make the prospect suspicious and sour the whole deal.

7. It Pays to Advertise. Write a positive ad. If your car is in really good condition don't hesitate to say so, because that's what the prospective buyer is eagerly looking for. If the car is several years old but has new top, tires, side-screens or a recent overhaul, it's worth mentioning because the buyer knows that he's had a reprieve from some immediate expenses. Don't exaggerate. Don't label a car as spotless unless there are absolutely no scratches on it.

When you advertise "low mileage" you should be referring to a car with a good deal less than 10,000 miles per year of its life on the odometer. If you want to add the old chestnut "never raced" go right ahead, you may attract someone who's a greenhorn to the sports car game. The old hands all know that one wild rally with a "hacker" behind the wheel can do more harm than a dozen races at the hands of an expert driver who maintains his car carefully.

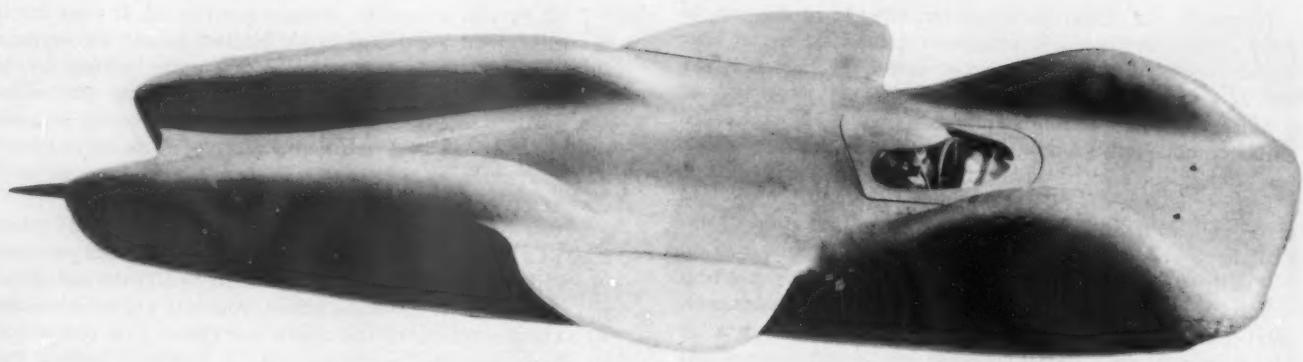
8. Demonstrate. Be wary of letting a prospect behind the wheel. Find out if he's ever driven anything more precise handling than an Essex Super Six. If you're selling a real bomb, you're the one to put it through the paces. Let your eager-eyed prospect hold a stopwatch. If he misses a snap shift, no amount of embarrassed apologies will replace the gear teeth. If you have kept a complete set of bills for service, repairs and tune ups, by all means drag them out, they make excellent documentary evidence of your claim of "mint" condition.

9. Horsetrade. You should have your car's value at current market pretty well spotted before you start the polite game of haggling that any two parties to a used car sale should expect. Build some "air" into your asking price so that you can come down \$25 to \$40 when the prospect sadly calls your attention to a cracked side curtain or a smooth spare tire.

When you get down to the price that you know is right, don't panic, let the prospect go home and "think it over." If your car is a good value and priced sensibly your potential buyer will probably forego the chore of tracking down more "leads." If you are anxious to close the deal when he calls you next day, \$25 chopped off will often do the trick. Remember when he calls after seeing the car or comes back he wants it, and perhaps all he needs is time to get used to the idea of spending a big hunk of dough.

10. Sell for Cash. Leave the credit business to dealers and banks who are equipped to take the risks. Remind the prospect that he's getting the car for about \$100 to \$150 less than the dealer's advertised price for an equivalent value, and that the dealer's advertised price doesn't include the interest charges. Be polite but firm, demand either a bank check or the "long green" in person. On your part be prepared to give the buyer a complete and clear title including a notarized statement that there are no liens or notes outstanding on the car. A final point, make sure his license plates go on the car before he takes title and climbs behind the wheel.

Selling your foreign car requires that you be a bit horse trader, a bit economist, and somewhat of an advertising executive all rolled into one. If you can add a good strong back and indefatigable patience to all, this you should do well in any deal. #



**world's
fastest
sports car**

***Daimler's T-80 was designed to smash all existing records
...and someday might do it.***

In a modest automobile museum at Untertürkheim near the bustling city of Stuttgart, Germany, a strange automobile sits quietly in a place of honor. Looking for all the world like a sleek monster imported from another planet, this fantastic car is remarkable for two reasons: 1) it is unquestionably the fastest car on earth, capable of speeds up to 500 miles an hour, and 2) it's never been run!

The car, an immense and complicated piece of machinery, is known as the T-80 and was built in 1938 by German automobile makers, Daimler-Benz A.G. It is an ultra-streamlined car, completely cowled, with short, stubby wings to help maintain stability at high speeds. It was built for one purpose only: to beat the 1937 speed record of better than 350 miles an hour set by Britain's John Cobb in his Railton Special on Bonneville's salt flats in Utah. And even today, with the speed record close to 400 miles an hour, the T-80—with little more effort than rolling it out of the museum and fueling it up—could add an easy 50 miles an hour to the record without the slightest strain.

From its tapered nose to its long tail overhang, the T-80 is a unique and ingenious car. For one thing, it has six wheels—four huge wire wheels in the rear, two in front. It is 25 feet four inches long, and the massive chassis is covered with a smooth, unbroken light-metal alloy body. Its weight, by modern racing standards, is quite heavy: 5,656 pounds, or more than $2\frac{1}{2}$ tons!

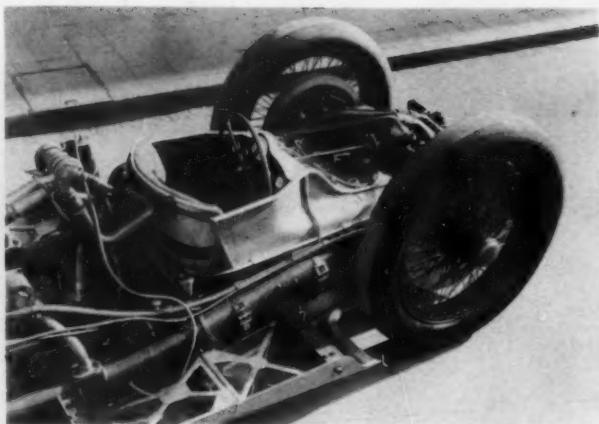
The engine is even more impressive. When the T-80 was first built, it was powered by a powerful Daimler-Benz "600" aircraft engine. In later stages of the car's development, the "600" engine was replaced by a "601," and later by a "603." This engine, used in many of the planes which made Adolph Hitler's Luftwaffe a potent and effective fighting force, is located behind the driver and directly over the four rear wheels.

The engine is probably the most outstanding example of the gigantic power plants that were being developed in Europe in the late 1930's. A V-12 engine with a phenomenal displacement of 44 liters (2,685 cubic inches), it develops 3,030 horsepower at 3,000 r.p.m. It runs on alcohol, and is easily capable of the continued high speeds that would be essential for record runs.

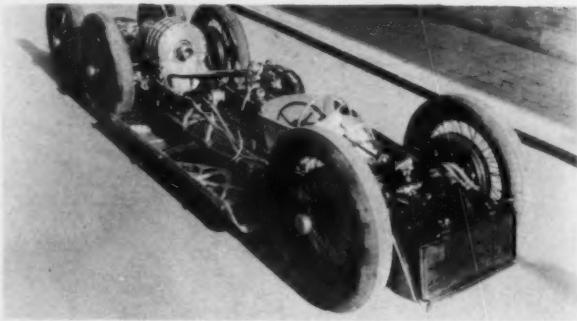
The four rear wheels serve a dual purpose. They not only support the heavy engine, but all four wheels are supplied with power, giving the car twice the traction of its contemporary competition. The T-80 has no gearbox, but is equipped with a clutch which supplies power through a fixed reduction gear.

The T-80 boasts another unusual arrangement which, because of its complicated operation, can only be described in general terms. It is a system which automatically decreases throttle opening if wheelspin develops at any of the four rear wheels at any speed. This radical arrange-

By AL OUTCALT



Cockpit of T-80 is cramped with very little clearance between steering wheel and driver. Note huge diameter of the brake drums.



Exposed chassis shows complex arrangements of components and large diameter tubular chassis braced with alloy castings.

ment not only maintains even traction regardless of road conditions, but also serves as a safety factor, giving the driver full control of the car at all times.

The T-80 was the brainchild of two great automotive pioneers. One, the lesser known of the two, was the German aerodynamics specialist Von Fachsenfeld whose designs helped the German automobile industry sweep racing competition in the middle and later 1930's. The other was that brilliant but sometimes cantankerous automotive designer and engineer, Ferdinand Porsche.

To understand the history of the T-80, you must understand the position of the Daimler-Benz factory in the middle and late 1930's. This was the period when Hitler was concentrating on proving his "master race" theories, whether it was in athletics (where he wasn't very successful) or in racing competition (where he was, especially when he used non-German drivers like Tazio Nuvolari and Rudolph Caracciola).

Hitler poured a steady supply of Reichmarks into the German automotive industry in an effort to encourage faster cars and better drivers. Out of this subsidized race grew two major German companies which, between them, swept most of Europe's Grand Prix races—Auto-Union and Daimler-Benz.

While both Auto-Union and Daimler-Benz put most of their efforts into winning races, there was also a continuing attempt to establish speed records. Because of the cost

involved, however, most of the speed runs were made at the end of regular racing seasons, and in Grand Prix cars which were modified to achieve top speed. The emphasis was on specially-built aerodynamic bodies which would reduce air resistance, and on peak horsepower (at sustained high speeds) rather than high torque in each of the gears. The factors of handling, cornering and acceleration, so vital in Grand Prix races, were virtually ignored in the cars that were modified for record speed runs.

After the 1934 racing season was ended, for example, Daimler-Benz engineers modified one eight-cylinder car, placed a special body over it and took it to Budapest where Caracciola set several new world speed records in the three-to-five liter class. Two years later, another car was modified for a try at the speed records, this time a 12 cylinder, 5.66 liter car which sported an aluminum body of the envelope variety. This car, also with Caracciola driving, posted another set of new speed records.

In 1937, Auto-Union had moved in to take back possession of the records in a streamlined Auto-Union car driven by famed driver Bernd Rosemeyer (and designed, incidentally, by T-80 designer Porsche). Hardly was the ink dry in the record books when Daimler-Benz modified the 1936 5.66-liter car even further, and sent Caracciola out to try for a new speed mark. His 268.5 mph run for the mile (from a flying start) broke Rosemeyer's record.

This heated competition between Daimler-Benz and Auto-Union was one of the major factors leading to the development of the T-80. Both firms were out only to beat each other, since factory racing teams representing other countries had long since fallen behind the two German companies. To both firms, victory meant bigger subsidies from the German government.

In 1938, however, a new element cropped up that led directly to the design and building of the T-80. John Cobb, Britain's speed-hungry driver, had brought his powerful Railton car to Bonneville and had set a record top speed of 350.2 mph.

This fabulous speed, set by an Englishman when relations between England and Germany were not very harmonious, ranked the Daimler-Benz factory. They commissioned Porsche and Von Fachsenfeld to design a car which would be capable of speeds in excess of 400 rpm.

At the time, Porsche was involved in a number of projects which limited him in his work on the T-80. One of the projects was the Volkswagen, another of Hitler's brainstorms, which Porsche had designed and for which Daimler-Benz was building a series of 30 prototypes. Porsche was also developing an agricultural tractor, and was working out further improvements on the well-known rear-engine Auto-Union racing car in which Rosemeyer had set so many speed records. Thus we have the amusing situation of Dr. Porsche developing cars for each of two competing companies whose sole aim was to beat each other in Grand Prix races and in tries for speed records.

At any rate, Porsche began developing the T-80 to beat Cobb's record. With the usual precision for which Daimler-Benz is noted, every detail of the car's development was carefully scrutinized over the months of planning and construction. In order to reach speeds in excess of 400 mph, certain parts of the car required special attention. Tires that were being used in competition at that time were found to be totally inadequate for such fantastic speeds; Daimler-Benz turned to the well-known European tire

(Continued on page 64)



stopwatch
seminar

*LISCA's Rally School caters to
beginners and old pro's alike*



Photographs by Harold Feinstein



Since the first rally in 1895, rally techniques have been considered somewhat of a black art, tinged with mystery and a bit of the occult. Those who were consistent winners were looked upon as witch doctors who had secret formulae and Ouija boards to guide them. This belief, unfortunately, is still held today among many beginners who don't realize that rallying is basically a combination of two arts, driving and navigating.

Good drivers are fairly plentiful, navigation is the thorn that discourages many would-be cup winners. Trying to learn navigation by hit or miss methods is something akin to "brain surgery self taught." It is a subject that is best learned under the supervision of experts, and luckily for the rallyists of the Long Island area, experts have made themselves available.

An honest-to-goodness rally school has been established by the Long Island Sports Cars Association (LISCA) to teach rally techniques to any of the members that want to learn. The school believes in learning by doing. Classes consist initially of blackboard and theoretical work in the use of slide rules, stopwatches, computers, and odometers. Once checked out, the students take to their cars and go on a short night rally to practice what they have just learned. The teams are mixed: an experienced driver will work with a tyro navigator, or conversely, skilled

By ART PECK

navigators are used to check out a driver on his first run. The system has been eminently successful in that the classroom (donated by a sympathetic restaurateur) is usually packed to overflowing on the one Thursday that the school is in session each month.

Oddly enough there are almost as many experienced crews attending the school as there are beginners. With new techniques and approaches to the ever-changing rally, those who don't keep up will soon give way to sharper crews. That's the proven axiom of the more realistic rallyists.

The basic techniques taught at the school are exactly the same as those involved in navigating a ship or plane. Primarily, if you are traveling over a known distance and it took you X minutes to get there, then your average speed is Distance divided by Time equals Average Speed. This is, of course, an oversimplification, but it's the underlying principle of rallying.

Doing these calculations at night in a jarring car while keeping track of road signs, instruments and a sometimes errant driver isn't exactly the same as doing it in the classroom. Many students who find the entire operation a snap on paper fall to pieces under the pressure of having to make instant decisions on the basis of computations. Experience is the final touch to any number of classroom sessions as the school's founder, Joe Bracco, constantly points out:

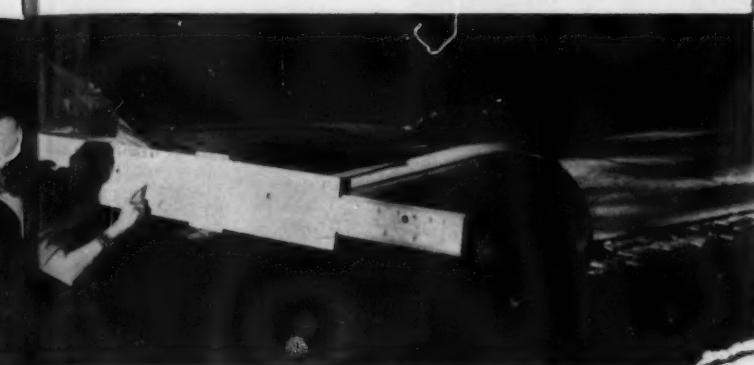


Rapt attention by student who can find only standing room is a tribute to school's popularity.



Navigator uses special illuminated clipboard with two built-in lights to aid in nighttime computing.

Prexy Bracco demonstrates use of portable "odometer" which can be zeroed at will. Many such devices are pressed into use by Mr. Bracco to make rallying easier.



Gagman Bracco carries eight foot classroom slide rule in Jag as an example of how to overdo things.



Packed classroom at rear of Bella Vista Cafe causes many to watch from hallway (below). Model T and Austin-Healey wait for start.

When *Sports Cars Illustrated* first heard of the rally school they sent Harold Feinstein to do the photographic coverage. His only instructions were to capture the mood and activities of the school as it really is. This he did eminently well and we congratulate him for his perceptive coverage.

Many good things have come out of the rally school. Feeling the need for a good book on the subject, the author in conjunction with David Hebb have taken the tried techniques used at the school and are now producing a simple and thorough treatise on rallies. This will be a welcome offering to beginning rallyists and many experienced hands as well.

The basic social aspects of the school is somewhat en-

hanced by the fact that classes are held at the Bella Vista, a fine restaurant in Centerport, L.I. The most interesting comment on the school has come from prexy Joe Bracco himself, "I've learned more about rallies since teaching the subject, than I ever knew existed," was Joe's sardonic comment. All of which goes to prove, when you think you know it all, you find out that you're just really beginning. Classes have proved to be so much fun, that many enjoy the classroom sessions more than actual rallying.

LISCA has set a fine example of the service an organization can give to its members, (other clubs take note). For many evenings of fun, not to mention much improved scores in your rally efforts, why not join a class?

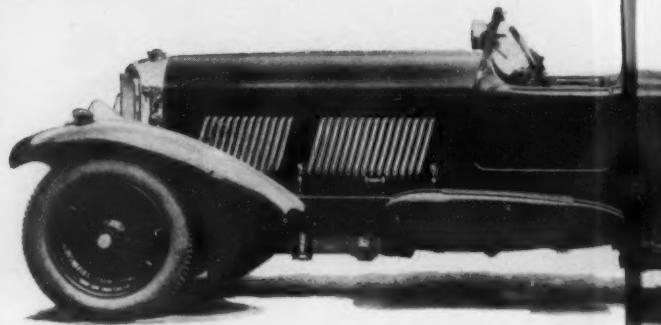
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A touring car that whipped

sports cars...

and frightened buyers away



Sleek bodies and powerful engines of (1929) Park Ward (directly above) and 4½ litre (1927) Bentleys made customers wary.

too the Great Bentley

EVER hear of a car that was too good for its own good? The original Bentley was.

In the decade of the original Bentley firm's productive years, designer Walter O. Bentley built less than 6000 cars—1600 of the original 3-litre, four cylinder model, then a 4.5 litre four, a 6.5 litre six and finally a fabulous 8 litre model with dual gas pedals.

He was forced out of business partly because his *touring* car was so successful against sports cars that the average British autoist was *afraid to drive it*.

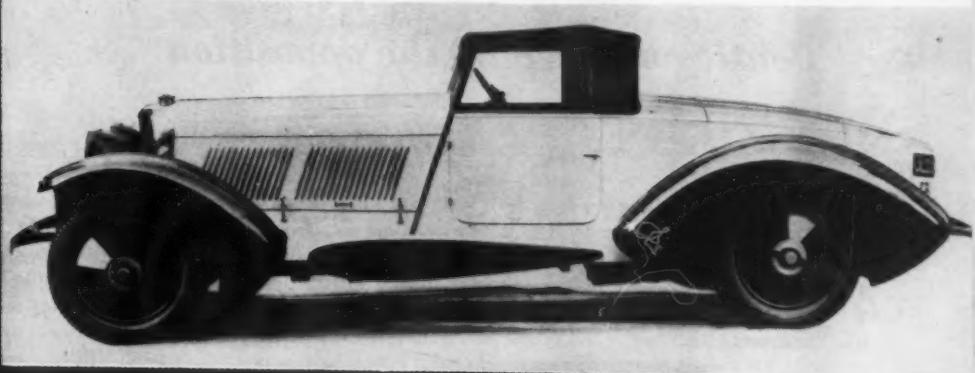
Bentley's story reads like Horatio Alger, British style. Successively a motorcycle racer, railroad shop apprentice, dealer in French cars and top aircraft engine designer, Walter O. had evolved in his mind the perfect car for English touring, heavy enough to take the beating of hard service, but powerful enough to attain high speeds.

He proposed to make his dream car reliable as income

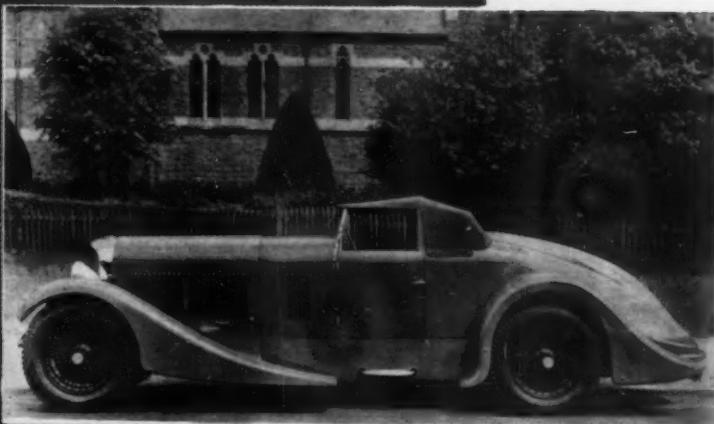
tax day, yet capable of performing with equal ease at eight or 98 miles per hour. What he evolved was a passenger car so magnificent that it took the measure of the world's finest sports cars, and even gave the top racers a run for their money.

When Bentley designed his original engine about 1919, he had years of experiments behind him. A now almost forgotten French side-valve four-cylinder called the D.F.B. (Doriot, Flandrin et Parant) may be considered the collateral father of the Bentley. Walter O. had put the first aluminum alloy pistons and a special camshaft into this car and had managed almost 90 miles per hour, fantastic for such a small engine (2001 cc) in 1914. Bentley got other ideas during World War I while developing-off the French Clerget Rotary aircraft series—the Bentley rotary aircraft engine. With friends and relatives providing the working capital, Bentley, rushed his prototype toward

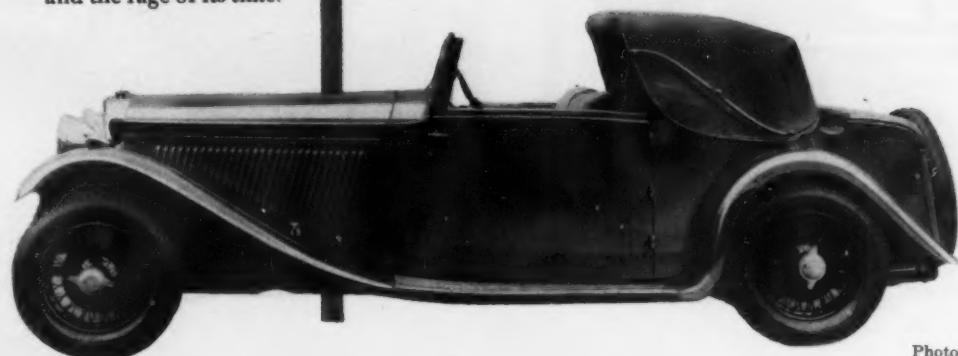
Sportingly elegant, this Barker Bentley Speed Six was produced in 1929. This car marked the era of the boat-tailed Cabriolet.



Right, the huge engined 8 litre Nanden Plas Bentley contained what some thought of as "too much power."



Cleanly styled, Barker 9½ litre Cabriolet was a touring delight and the rage of its time.



Photographs © The Autocar

Designing for dependability and power, Bentley mopped up the opposition

a target date of November, 1919 and the London Olympia auto show.

The four-cylinder engine had four valves and two cams per cylinder, 80 mm bore by 149 mm piston stroke, 3-litre capacity. The engine was monobloc construction without a separate head. A single magneto was mounted on the left side of the engine. (Later experimental cars had a twin-spark magneto and two sparkplugs per cylinder, eventually replaced by a dual magneto arrangement). Wheelbase was 112 inches and track was 54 inches. Bentley announced the engine would deliver 65 brake horsepower which, with a 4.3 to 1 compression ratio should deliver 80 miles an hour top speed. There were many who doubted he could make good on his claims. At the engine's first public bench test—before Bentley's backers—it wouldn't even turn over, until Walter O. sneaked in benzol for the gasoline.

The first production Bentley didn't appear until 1921, had triple cams with separate rockers, wet sump lubrication and a 3.92 rear axle ratio. It went faster than the claimed 80 miles per hour. In the 3-litre class, Walter O. also built a long (130-inch) chassis model to accommodate more formal body styles, a TT (Tourist Trophy) model, then the famous speed model, sometimes called the Red Label (dual carburetors and four-wheel brakes). The 100 mile an hour Green Labels followed (6.1 compression ratio, 85 bhp at 3500 revolutions per minute).

In all there were 1600 3-litre Bentleys built, ending with the 1927 Speed Weymann sedan. Many are still in everyday use, revered by members of one of the most exclusive auto organizations in the world, the Bentley Drivers' Club. All of Bentley's cars—even the 4-litre of design other than W.O.'s put out in the waning days of the original firm—were high-riding massive cars that oozed brute power. Cars that looked as if they were the masters of any road and—with the exception of the final 4-litre—proved it.

Perhaps the proof—during which Bentley mopped up

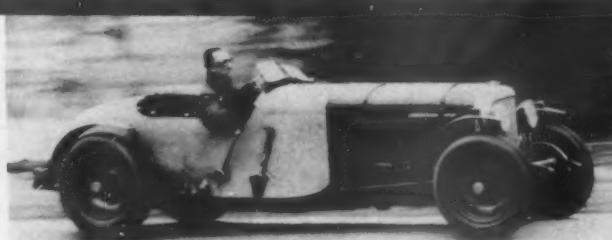
sports car opposition consistently for a decade—was too good. But it brought Britain auto prestige and made the Bentley boys—a band of exper-amateur and semi-pro drivers—racing heroes. The fact that two of their four classic efforts were losing races is just another of the many paradoxes in this amazing marque's unique history.

First Bentley Boy hero was Frank C. Clement. He drove a short wheelbase T.T. in the 1922 Isle of Man Tourist Trophy race . . . a race Walter O. wanted to win to give his new car its first taste of prestige.

June 22, 1922, day of the race, was nasty as only British weather can be nasty. Rain clouds threatened dark against dismal gray skies. Fog hid the mountains. The Isle of Man roads were glistening with moisture. A macadam stretch still showed an oil film left from practice laps. Bentley entered three stock cars under such conditions against the finest in British racers—the Sunbeams and the Vauxhalls. In fact, it began to rain just as the stammer race began.

H. O. D. Seagrave and Jean Chassagne, in Sunbeams, jumped into the lead, followed by W. O. himself, a Vauxhall, then Clement's Bentley. The wind and the rain increased as the cars began the second lap around the Isle of Man. The early laps saw the Vauxhall threat eliminated by motor trouble and by the sixth lap even the great Seagrave had been sidelined, relinquishing the lead to his French teammate. W. O.'s team strategy had moved Clement into second, about six minutes in elapsed time off the lead.

Now it was between the great French driver and Clement. The racer was the faster car, and could run away on the stretches. But up in the mountains, the big touring Bentley ate up the hills like caviar and cornered as if it were on a track. Time and again Clement cut into the Sunbeam's time leads but the rain had stopped and the sun was drying the roads out. So Chassagne gave his car her head and managed to save enough time in the straights to keep just ahead of the Bentley.



Bentley racing teams won in event after event, spawning such drivers as S. Davis and "the Bentley Boys."



Sports Saloon, MK VI, with coachwork by James Young Ltd. shows classic stature within the modern styling.

As they came around for the final time, the two were seconds apart in elapsed time. The Frenchman must have sensed this for he pushed his Sunbeam that little bit extra to edge to victory by about seven seconds—in a six hour race. Clement's performance, however, plus the fact that the other two Bentleys finished fourth and fifth, brought the car forcibly to the attention of the British car fans. This was like a couple of stock cars finishing high at Indianapolis.

The marque was definitely on the rise after this. A "Red Label" four-seater, owned by Capt. J. F. Duff set a new record of 86.74 miles per hour at England's Brooklands Double Twelve event late in 1922. Then Duff teamed with Clement to win the 1924 Le Mans 24-hour race against the best factory teams in Europe.

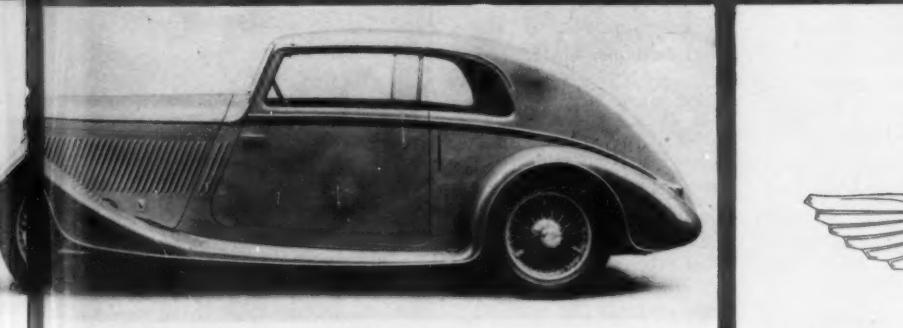
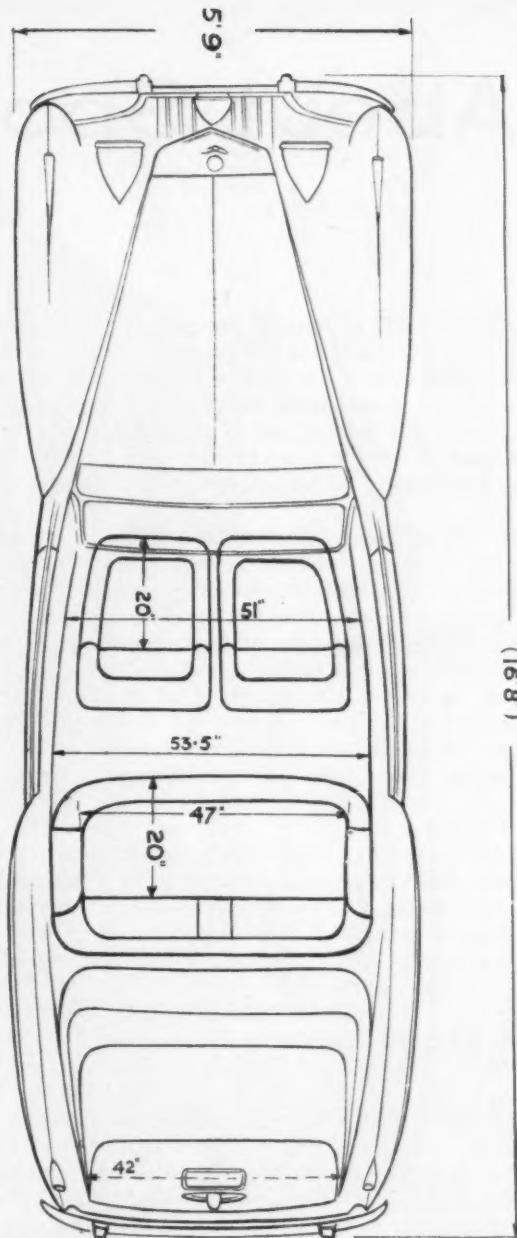
It was also in 1924 that another paradox in the Bentley history began. Woolf Barnato, heir to a gold and diamond fortune, bought a Bentley and fell in love with its performance. Two years later he had placed his millions behind the young firm, and it was in spite of this apparently solid backing that the original company went on the rocks.

Barnato's advisers—he was too interested in racing the car—reorganized the business operation while Woolf reorganized the competition plans. In 1925 the 6-litre had made its debut and the 3-litre had failed to finish at Le Mans. 1926 saw successes in British competition, and by 1927 three Bentleys, as a team, descended on Le Mans as favorites.

Callingham, running first with mates placed two and three behind him, turned White House corner about dusk to crash his 4.5 into a Schneider standing broadside in the road. Duller, number two, added his car to the pile. Davis in the third positioned Bentley, managed to hit the pile up so as to keep the car in running order. The three drivers joined and pulled this last Bentley loose from the wreck-

(Continued on page 62)

Eminently dependable...the classic Bentley chassis.



Neat, simple, forceful and suggesting power, this Airline of 3½ litres has wire wheels and the long hood of the classic Bentley.



About Sports Cars

by Dave Ash

WHETHER or not the displacement of Grand Prix engines is still further reduced in the near future seems to hold out little hope for cutting GP speeds down by any considerable amount. It would seem that those who argue for the use of pump fuels have a valid point since this would more nearly relate the performance of the race and sports car engines of famous make sports cars.

Such talk of engine size reduction in GP racing has begun again in earnest with the introduction of the new one and one half liter Maserati sports racer which in prototype form "creamed" the Porsche Spyders on their home grounds. Perhaps most exciting of all are the reports, in the British motoring press of the appearance, in experimental form at the recent TT in Ireland of two new D.O.H.C. engines in 'A' type MG chassis. No doubt the team of Jackson and Enever are working the bugs out of what will arise as the powerplants for their racing car for coming years.

Further word from Maserati claims 145 mph for their new 1500, which is somewhat faster than their last two litre. There are rumblings in the British press that either or both of the two new D.O.H.C. MG engines (one has 66 degree valve inclination, & the other has 90) are capable of bettering 100 bhp per litre!

Class F has been one of the most bitterly contested categories for years, and this news would serve to add fuel to the fires. 1956 could be the year of years for class F, if the two great firms of Maserati and MG seriously go after Porsche and OSCA. At present the big, twin ignition OSCA, correctly prepared and driven, is the hottest car of its class in the country today. The only 550 Spyder that comes really close to being able to hold it is the one that Poole and Davis drove at Sebring and—the same one that Hans Hermann drove to victory by a whisker in Mexico over Yaroslav Yuhan's similar machine. Candy Poole seems to be at a loss to explain why this car was so much faster than all the other 550's at Sebring last year except that he felt that the gear box ratios are more advantageous, and, of course, that it is a works car. The Spyder is, however, a car that can be made faster, and look for that to happen.

The OSCA Works, which is the love and labor of the Maserati brothers, is unfortunately hampered by its small size and lack of financial support. In a long duel for supremacy this can be painful to the small company. But for 1956, the possibility for a real OSCA, Maseratti, Porsche and MG dogfight for class F honors seems to be in the wind, and it's an exciting thought.

One can look for the use of disc brakes on many more cars of this category, and those equipped with the Dunlop units figure to have a distinct advantage at this writing.

We note with avid interest that Stirling Moss was overpowering at the TT. In the rain he proved that although still a very young man he has graduated from the "very fast" class to the rank of great. A mantle which, by the way, he and Fangio have to share with very, very few people indeed. Some of the lap times were more than sur-

prising. Consider that the D Jag (Hawthorn) posted the lap record, but that Moss was able to beat him with the obviously slower Mercedes in the rain. Consider also, that Desmond Titterington was sometimes nearly half a minute faster than Fitch, and Moss was at times almost 15 seconds faster than Desmond. Mmmmmmm

Some of us were chatting the other day, and someone raised the question of why the three litre Maseratis don't rule the roost as they were expected to. In general it is to be assumed that whenever there is a good Monza, or 4.5 Ferarri properly prepared and conducted on hand, the "Maser" simply hasn't enough steam. Of course there is the D Jaguar which is also too quick for the "Masers," but the Jag is a car that is far happier on the long circuit. In general they don't seem to be happy on the short twisting circuit, but this car can be the hardest to beat where it can put its long legs to work. Of course as we stated earlier, given a big Ferarri 4.5 or 4.9 and the right driver, all of the rest of the boys will be following the leader.

We were considerably saddened to read of the noise in the general press about the demise of the young screen actor James Dean. The talented young man had rapidly carved a big place for himself in the film world and seemed destined to do the same in sports cars. Of his real driving talents we know nothing, but it is shocking to see what criticism sports cars in general, and sports racing cars in particular have been subjected to as a result of this accident. There seems little doubt he was driving too fast, and the fact that he had averaged something like 75 mph between a speeding ticket two hours before his fatal accident and the crash which took his life was certainly worked over thoroughly.

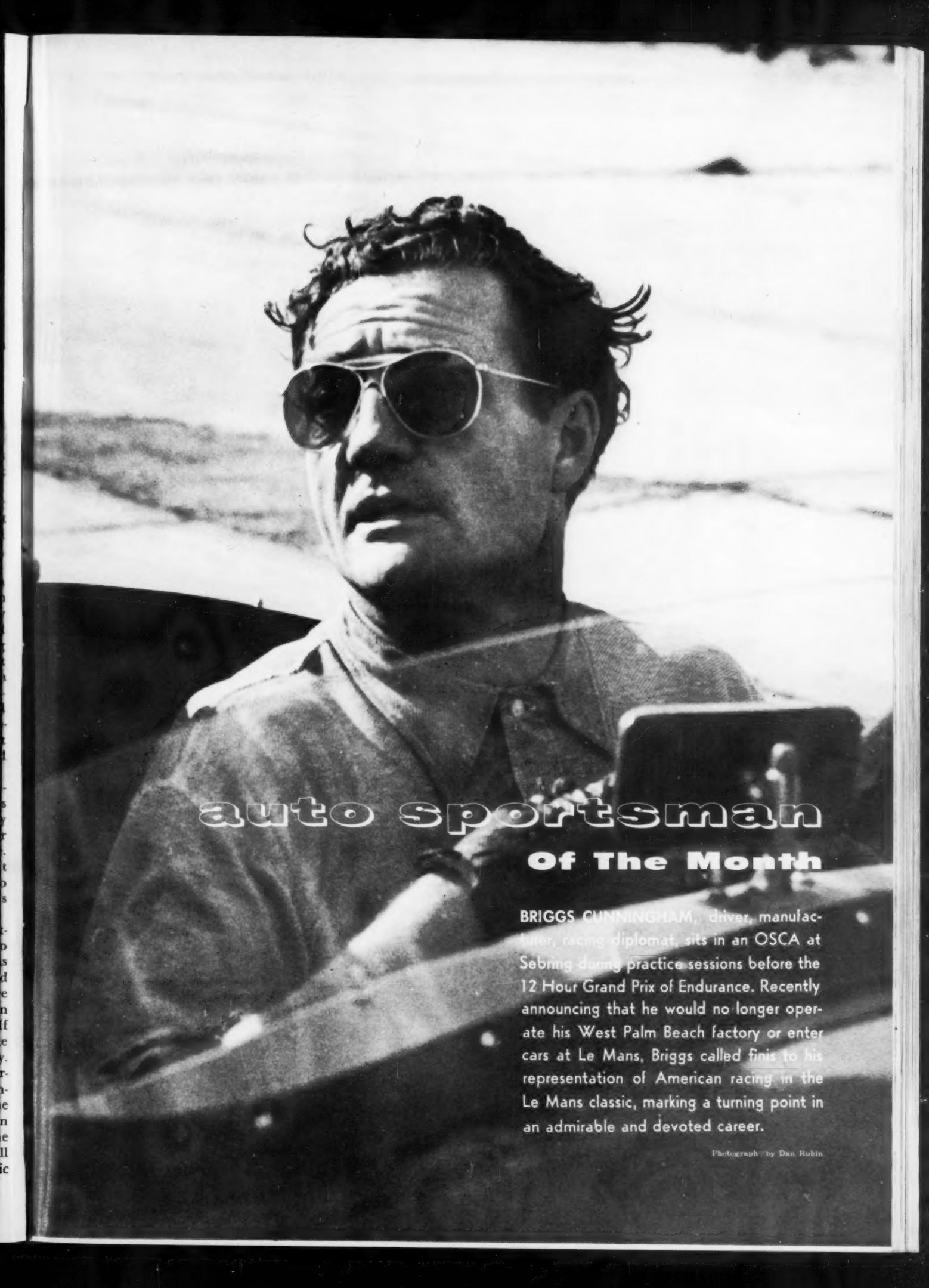
The 550 Porsche is an even more docile and well behaved car than the production version. It has tremendous brakes and even at 80 or 90 mph it's a safe car on any open road. There is no question of this, or that the other man cut him off, but somehow he didn't shut off in time. Maybe he wasn't paying attention, maybe there wasn't time for him to do anything, but he could have waited to push it until he had arrived at the circuit in any case. It's a great pity that he didn't.

Some manufacturers are shying away from chrome plating of wire wheels, complaining that this process tends to cause crystallization and spoke failure. Past experience has shown these wheels to be very difficult to maintain, and that they require more frequent truing than plain wire wheels. Road salts which are used extensively in certain parts of the country, raise hob with the plating too. If you already own such a set, watch them carefully for true and fractures, but if not—be happy with the painted variety.

With the exception of an occasional outstanding performance at Thompson or similar short tracks, the Thunderbirds are not what we would call impressive, and the Corvettes are even less so. These cars are a long step in the right direction, and a happy one to be sure, but the crux of the matter is that although some choose to call them sports cars, they are really conventional domestic chassis treated in a sporting manner.



l - s y r - t o s
l - o s d e n f e .
l - r - n e n e l l ic



auto sportsman of the month

BRIGGS CUNNINGHAM, driver, manufacturer, racing diplomat, sits in an OSCA at Sebring during practice sessions before the 12 Hour Grand Prix of Endurance. Recently announcing that he would no longer operate his West Palm Beach factory or enter cars at Le Mans, Briggs called finis to his representation of American racing in the Le Mans classic, marking a turning point in an admirable and devoted career.

Photograph by Dan Rubin





Competition Review

The important thing is not to win, but to take part; the important thing in life is not the triumph, but the struggle. The essential thing is not to have conquered, but to have fought well.

—Pierre Coubertin
Founder of the Olympics

Finale at TORREY PINES

Jim Tunison hits the difficult and deceptive first turn, spins, then begins a triple roll. He was not seriously hurt. Note helmet flying off in first shot and tossed high in second at end of second roll. Crowd registers mixed reaction.

Photographs by Connell and Iwerks

Ken Miles in his MG special,
"the flying shingle," wheels
through a corner.



By
JIM MOURNING



AGREY mantle hung over the day and a chilling wind swept in from the ocean, seeming to symbolize the sadness already touching many of racing's enthusiasts. This was to be the last time that the flashing sports cars would roar over the twisting roads of Torrey Pines, the last time the thunder of exhausts would echo along the bluffs as the cars sped above the Pacific and wound back in among the stunted pines.

But if this was to be a farewell, then organizers and contestants were determined to make it a big one and feverish preparation for Saturday's six hour endurance race mingled with anticipation of Sunday's slate of shorter events.

Still, as the drivers sprinted across the road and shot away into the first long hour, it was obvious that something was missing. Tension still ran high in the pits and the action was shaping up as excitingly as ever, but part of that special holiday spirit that, somehow, had always set Torrey Pines apart was missing. As the race progressed, many fans merely sat huddled deep in jackets or coats and watched with expressionless eyes or stood around the refreshment stands trying to warm themselves with hot coffee.

As with all endurance races, much of Saturday's excite-



(left) MG drifts heavily.
(below) Mercedes 300SL, Bruce Kessler up,
won the production sports car
race on Sunday.

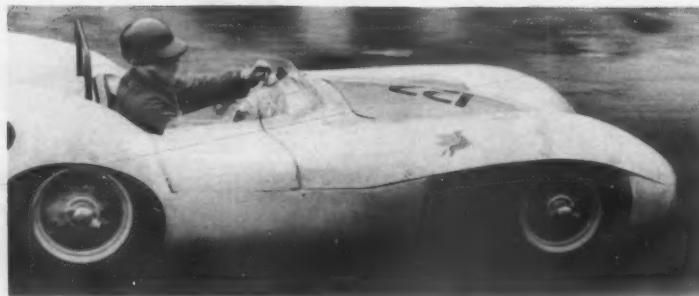
ment was in the pits. Overall clad men scurried about, holding up pit boards for the speeding cars, catching lap times on their stop watches and recording them on their lap charts, squatting down to peer anxiously at the tires as their cars thundered past the pits. A few hovered over radio sets, keeping in constant touch with their drivers by two-way radio. Occasionally, a steel nerved driver could be seen napping as he awaited his turn behind the wheel.

Finally, just as the greyness of the day had begun to slip into twilight, a C Jaguar flashed under the checkered flag and the race was over, over for everyone but the determined few who worked far into the night to get their cars properly prepared for the shorter races on Sunday.

The following day was marred by a continuation of the dismal weather and the announcement, now official, that



Pearce Woods in his C Jaguar smiles victoriously after taking the overall award in the six-hour endurance race.



Magnificent Lotus whips through a turn.

this would be the last Torrey Pines event. Apparently dreaming of another resort area of the calibre of Pebble Beach and possibly prompted by a recent misfortune on the circuit, San Diego city officials had let it be known that the area would be turned into a golf course, despite the protests of both racing enthusiasts and local merchants.

But the crowd rolled in, thicker than the previous day and in a more jovial mood. And the professional football game blaring forth from dozens of portable radios was drowned out from time to time by shouts over a particular bit of excitement, muffled cheers for the victors and gasps of apprehension as first one MG and then another flipped on the deceptive corners. Fortunately, neither driver was critically injured.

With the last race of the day came a fitting climax to this farewell appearance, as the battle for first place among the big machines raged savagely, finally to be won by a matter of inches.

As darkness settled over the course, some competitors hurried away, perhaps a little too quickly, while others lingered for a last look at a site that had been synonymous with excitement and high speed ever since the early days of sports car racing.

This, then, was the end of a classic.

Six years of a fine history ended Oct. 23, 1955. Allard J2X slipstreams a Ferrari 4.9 during the main event of the Torrey Pines races.

RESULTS

SIX HOUR RACE: (Number started—55; number finished—35); *Class B modified:* Ives, Allard J2X. *Class C modified:* Woods, C-Jaguar; Woodward/Erb, Jag Special; Robinson/Cleaver/Phillips, Jaguar MC; Rowley/Gilstrap, Nardi-Chevy; Van Buren, Ford-DeSoto. *Class D modified:* Pringle/Jackson-Moore, Austin-Healey; Knowe/Pierson, TR-2. *Class D production:* O'Shea/Hill, Mercedes 300SL; Breto/Gillespie, Lancia; Piercy/Stone, Austin-Healey. *Class E modified:* McLaughlin/Peterson, Arnolt-Bristol; Hall/Curtis, Ferrari Spyder. *Class E production:* Willett/Dort, Arnolt-Bristol; Yarter/Hoppe, Arnolt-Bristol; Parsons/Mourning, Morgan, McEachen/Rosenthal, Doretti; Seage/Varnum, TR-2. *Class F modified:* McAfee, Porsche Spyder; Turner/Kunstle, Porsche Spyder; Boyd/DeOlivera, MG TD Special. *Class F production:* Barker/Bob Drake, Porsche Speedster; Buckler/Ginther, Porsche Speedster; Parkinson/Brigham, MG A; Miles/Yedor, MG A; Lumkin/Snider, MG TF 1500; Evans/Harris, MG TF 1500; Robert/Gebhart, MG TF; Dredge, MG TC; Dougan/Taylor, MG TD. *Class G modified:* Betes, Betes-Seifried Crosley Special. *Class H modified:* Crouzet/Kite, D.B. Panhard; Patterson/Long, Crosley Special; Duff/Parker, Panhard Special; Mullin/Manney, Panhard.

INDEX OF PERFORMANCE: Crouzet/Kite, D.B. Panhard; McAfee, Porsche Spyder; Turner/Kunstle, Porsche Spyder; Patterson/Long, Crosley Special; Barker/Drake, Porsche Speedster.

OVERALL AWARDS: Woods, C-Jaguar; O'Shea/Hill, Mercedes 300SL; Pringle/Jackson-Moore, Austin-Healey; McAfee, Porsche Spyder; Turner/Kunstle, Porsche Spyder.

SUNDAY

RACE I: Kunstle, Porsche Speedster; Dale Johnson, Porsche Speedster; Hanford, MG A; Shillam, Porsche Super; Wheeler, Porsche Speedster.

RACE II: Kessler, Mercedes 300SL; Critchlow, Jaguar XK 120M; Willett, Arnolt-Bristol; Weller, Jaguar XK 140MC; Oker, Morgan Plus 4.

RACE III: Sawyer, TR-2; Hoppe, Arnolt-Bristol; Turner, Austin-Healey; Taylor, MG TD; Poe, TR-2; Street, Singer.

RACE IV: Miles, MG Special; Kunstle, Porsche Spyder; Loudon, OSCA; McAfee, Porsche Spyder; Porter, Porsche Spyder.

RACE V: Fox, Cooper; Morrow, J.B.S.; Becker, Cooper; Cooper, Alfa Romeo; Gorman, Cooper.

RACE VI: Murphy, Kurtis-Buick; Daigh, Troutman-Barnes Special; McAfee, Ferrari Mexico; Kretz, TR-2; Edwards, Edwards Special.



Photographs by Irv Dolin

Overture
at
MARLBORO

OCTOBER 30, 1955 history began for what promises to be a long series of fascinating events. The First Annual MG National races was sponsored by the Washington D.C. Center of the MG Car Club. Staged on the new Marlboro circuit, the race drew fully sixty starters to the line, and competition began with fresh vigor and excitement.

The novice races were split into two groups, one containing cars of TD Mk2 and 1250 TF specs, and the other 1500 TF and Modifieds. These races were first of all a compliment to the Lavender Hill Mob who are responsible for the Marlboro circuit.

Race 3, for Modified "Geese" provided a mixed field, with three blown cars, Dunc Black's Lester, the 1250 Kieft of Watson and the 1466 Kieft of Randle as well as the writer in Stan Smilow's 1500 powered Motto. With the drop of the flag the Lester flashed into the lead never to be headed. The writer managed to get off behind and open about a dozen seconds on the third place Kieft of Watson with Frank Baptista holding off the blown cars of Robinson and Lautz. This order continued uninterrupted to the finish. Suzy Dietrich ran in this race as her first effort of

By DAVE ASH

The Congressional Trophy was taken by Duncan Black in a Lester. Black also was given the special Manhattan Auto Trophy



David Ash, who wrote this report for SCI, driving a 1250cc TF enters the "S" curve.



Jack Allen, novice driver, discusses last minute strategy with crewman, Herb Sullivan.

nailed down a most impressive fourth place in his Mk2. Having come to this race directly from the earlier novice race which he had won. The combined performances winning for him the award for the outstanding novice.

Under the threat of lead colored skies the feature race was lined up on the grid. It had turned chilly and the drivers were all bundled up in their cockpits. The field of 22 starters was quickly put in order, faster cars to the fore. With the drop of the flag, the uncatchable Lester swung up onto the banking to lead the pack into the oval with the Moto close behind.

Dick Thompson was moving up steadily in the A, Bill Long was leading Foxy Carter again among the 1250's, and Rowland Oliver's 1500 TC led the 1500TF's of Cappiello and Tweedale. Dick Irish obviously was having some kind of grief with the Kieft which did not figure in things by this time, and the 1250 Kieft of Watson suddenly departed with mechanical difficulties.

Increasing traffic really made the day in the last laps as the leaders worked their way through the field on the short circuit. By the twenty third lap Thompson had worked the A into third place, Oliver's TC had gotten a good hold on fourth and Maj. Cappiello had finally nailed down fifth. This order continued uninterrupted to the finish. Bill Long and Foxy Carter were 1-2 among the 1250TF and Mk2's, and Stan Boyd and Alen Day were first and second in the TD & TC category.

So ended a great day for the MG boys. Certainly this event is headed for big things in the future. The organizing committee is already working on next year's running which should be better than ever.

#



The Le Mans start (above) of the fifth race. Ash (below) takes pit signal in a Moto, placing second behind Duncan Black.



lab. notes

Abstracts of Recent Technical Literature.

New Automatic Brake Positioners

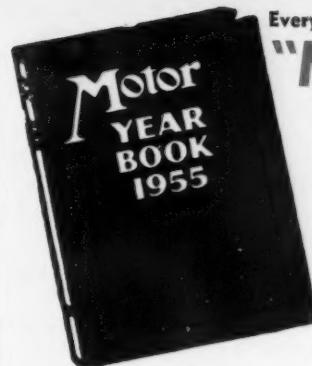
A new type of self-adjusting brake has recently been patented by the Dunlop Rubber Company. The new device is designed to maintain a constant and proper brake setting without the use of retraction springs, ratchets, or other devices. Basically designed to be used with disc brakes, the device is also adaptable to the external shoe type. The entire system is based on a hydraulic thermo setting principle. When the brakes are applied, heat generated causes the linings to expand resetting the hydraulic positioners so that the brake shoes occupy the same position after each braking operation.

New Graphiting Process

The American Electrofilm Corporation has recently developed a process whereby stable graphite may be applied to virtually any surface. Graphite's desirable lubrication qualities are taken full advantage of when applied in thicknesses of .00015 to .0005 with the graphite actually diffusing into the metal surfaces, providing a high adhesion factor under difficult conditions. A film of graphite will actually remain in the metal even when the surface coating has apparently been worn away. Some tests have shown that the surfaces treated with the new process can stand temperatures up to 2,000 degree F.

Coated Engine Valves

Research Laboratories Division of the General Motors Corporation has announced a new process for the dip coating of valves to give greater protection at higher operating temperatures, providing better seating through longer periods of useful valve life. Essentially the process consists of dipping the head of the valve into the molten flux bath and then into molten aluminum. Surplus deposits are removed by means of a compressed air blast. Field tests proved that the coated valves showed an increase in life from about 37,000 miles for untreated valves to 51,000 miles for the coated valves. The new process is in keeping with the fact that cars scrapped in 1950 ran twice the mileage and lasted twice as long as cars in 1925.



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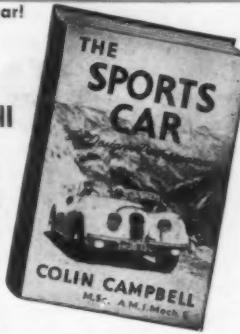
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GLOSSARY OF TECHNICAL TERMS

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SCI 26

with the clubs

THE Long Island Sports Car Association, with a record for well-organized and interesting rallies, did it again with its Rip Van Winkle Rally. The entrants on this two-day affair enjoyed a fine rally, a regularity run, a little relaxation and some marvelous fall scenery.

The entrants started out optimistically, unaware that several secret check points were keeping track of their every move. Five speed changes also served to keep drivers and navigators on their toes. After a brief luncheon, the cars continued on their way, and the first day's activities wound up with a dinner and dance. The regularity route was covered the following day.

Ross & Frances Merritt took first place in the rally with only 35 point penalties. James & LaVerne Hellen were second with 41 points and David & Alice Craig finished third with 49 points.

LISCA's trophies for top driver and navigator for the 1954-55 rally season, incidentally, went to Jeff & Alyce Wilkerson. And while the 1955-56 standings may change before you read this, Leo Rizzo and Art Peck are fighting it out for top driver while Hans Kaehler and James Ghent battle for top navigator trophy.

* * *

One of the more active sports car clubs in the Chicago area, the Midwest Sports Car Club, has started a new monthly club publication that ranks with the best. Called the Big End Journal and edited by Dic Van der Feen, it offers some of the finest stuff (both technical and general) that you'll find in a club bulletin. A displaced Easterner, Dic reports that sports car clubs in the midwest area have more of a tendency to work together than they do back East—even to the extent of manning each other's control points on rallies. If you're in the Chicago area and are interested in joining a good club, contact Dic at 1404 E. 57, Chicago.

* * *

The Pacific Sports Car Club's second annual Rallye de Wheele Bounce was another rousing success—even though 30 of the 210 entries didn't finish.

The team of Lynch/Lynch in a Jag took home first overall trophy and two other awards with an error of 8.21. Second place trophy and four other awards went to the team of Reesman & Rew in a TR2 with a 9.00 error. Third spot was captured by Philips and Golt in a Porsche with an error of 9.01.

Of the 29 team entries that finished, Orange County Sports Car Club won first place with a total team error of 39.33. The MG Car Club team took second and the San Fernando Valley Region of the Four Cylinder Club of America was third.

* * *

Know what a Goobershucker is? According to the Jaguar Owners Association, it's one step below a pea-picker.

With an eye to luring junior-grade pea-pickers, the J.O.A. ran a Goobershucker's Delight Rally last fall which turned out to be one of the toughest rallies the drivers and navigators had experienced.

The route was divided into six legs, with different instructions for each leg. They went like this: First leg,

a strange leg that included a 180-degree turn at 62.25% of the distance for the leg; and sixth leg, a map overlay that left the pea pickers peaked.

Bob Ridges & Bill Berge took first place in their Riley. Second spot went to Jim Sheehan & Dick Pitbladdo in an Austin-Healey. Roger Patterson & Dick Monnich captured third place in an XK120M and Marilyn & Warren Smith finished fourth in their TR2.

* * *

It may be painful to a sports car club when an American passenger car rolls home in first place on a rally, but the Baltimore Region of the Motor Sports Club of America seems to be bearing up under the shame. A Studebaker, driven by the team of Lester & Freimanis, won the club's Bridge & Culvert Rallye over 21 other cars—most of them of the imported variety.

The rally was especially tricky, since it was run over difficult roads through deep culverts—and at night to boot. Two mishaps marred the event: one Volkswagen turned over, strangely enough while doing only 5 m.p.h. in reverse! The other was a flooding in which one driver had to dismantle most of his engine to dry it out.

One entrant had the uncomfortable experience of driving into a farmer's driveway by accident and then having the farmer block him in, intentionally, with his (the farmer's) car. The farmer accused the Rallyist of leading all those strange little cars across his farm, and followed that with another accusation that the Rallyist had burned down the farmer's barn the week before. How he got out of the mess is still a big secret.

Second place in the rally went to the team of Matson & Gallup in a Corvette, followed by Ray & Mary Goldschmidt in a Jag.

* * *

Morgan owners interested in joining the Morgan Owners Club are invited to contact the club's founder, Curt Warshawsky, at 1544 Armacost Ave., West Los Angeles, Calif. Here's another of those clubs devoted to one make of foreign car which is growing fast.

* * *

Is your club planning a rally? A gymkhana? A hill climb? If so, SCI would like to hear about the results. Have your club secretary send us complete details for SCI's club news column.

For a rally, for example, the following is the minimum information required: type of rally, number of starting cars, location of starting point, length of rally (in miles), average speed, number of finishers, first five winners (including full names of both driver and navigator, make of car, point penalties), team winners, and any unusual, interesting or amusing incidents.

Send the information to Club News Editor, SCI, 41 East 42nd Street, New York, N.Y. And to keep SCI up-to-date on all your club activities, put SCI on the mailing list for your club publication.

tyro topics

An American translation of British motoring terms

ONE of the great pleasures of following any sport is the ability to use, with careless familiarity, the terms indigenous to that sport. The golfer has his "biries," the tennis player his "lobs," the fisherman his plugs and spinners. But the sports car devotee has it all over them. Not only can he draw from the terminology peculiar to sports car motoring, but from the entire lexicon of the automobile itself, and in no less than four languages!

If he wishes to refer to a racing stable, he can call it, in French, "écurie" or in Italian, "scuderia." If he's talking about a supercharger, he can call it, in German, a "kompressor." He can talk for hours about "grande vitesse," and "gran sport." He can call a really hot car a "bolide."

Fortunately, for most of us, however, the bulk of our motoring jargon is in English. Nevertheless, this does occasionally present a problem. There are differences between English, which we all speak (we trust), and British, which is spoken by natives of the bulwark and fountain-head of sports motoring.

We have done some research, and come up with a glossary of terms which may not be completely familiar to those of us accustomed to driving on the right side of the road.

Wheelbrace

A lug wrench.

Spanner

The generic term for wrench.

Ring spanner

A box wrench.

Box spanner

A tubular "pipe" socket with holes toward the top for the insertion of a turning rod. It is usually supplied in the tool kit as a "sparking plug" wrench.

Lorry

A truck.

Caravan

A trailer.

Drophead

A convertible. Never a "drophead convertible."

Decoke

To remove carbon from the engine.

Hunting

Bucking.

Sump

Oil pan.

Gudgeon pin

Wrist pin or piston pin. A case hardened steel pin extending across the piston to carry the small end of the connecting rod.

Crank pin

A connecting rod journal on the crankshaft. It receives the wide end of the connecting rod.

Webs

Crank arms. The portion of the crankshaft extending from the main bearing journals to the furthest connecting rod journals.

Silencer

The muffler on the exhaust system.

Scavenging air

The air which is sucked into the top of the carburetor.

Blower

A supercharger.

By PROKINE and PROKOP

Chatter. Particularly clutch chatter.

Clutch disc.

The clutch throw out bearing.

Gear shift.

The rear axle shaft.

Ring gear. The principal gear in the rear axle housing.

A heavy-splined shaft. Usually found in the transmission.

The master brake cylinder.

Breaking in or seating.

Kerosene.

Seat covers.

License plate.

A sedan.

The British term for windows, particularly the side or door windows. A *four-light* saloon would, therefore, be a sedan with four side windows.

The windshield.

The fenders.

The trunk.

The shock absorbers.

Spring covers. The covers placed over leaf springs to keep in the grease and keep out the dust.

Stabilizer bars or anti-sway bars.

Goosenecks. The two lateral extensions of the frame which protrude beyond the front cross-member, and onto which the front bumper is fastened.

The king pin.

The spindle arm. That part of the front wheel assembly which turns on the king pin, and about which the wheel spins on its bearing.

The pitman arm or steering arm.

The tie-rod. The rod which connects both front wheels.

The drag link. The tubular shaft which connects the Pitman arm with the tie-rod.

Ground.

Battery.

Generator.

Try these in your conversation . . . #

Bentley

(Continued from page 49)

age. Davis and co-driver, Bernard Rubin, kept up the chase of the French Aries, which had pulled far ahead. The Aries motor finally failed, letting Bentley win and establish itself as a legendary durable automobile.

At Le Mans the green cars finished first from 1927-30. Some of the great drivers bowed to them. It was here in 1930 that the Bentleys met Rudy Carraciola and a new model Mercedes. There were three unsupercharged factory team members and three 4½ litre supercharged "Blower" Bentleys. The Mercedes threat had the two teams conferring, and they managed to agree on a common strategy—make Carraciola use his supercharger so much the engine would break down.

Only 18 cars were to start, among them Stutz, Alfa Romeo, Bentley, Mercedes, British Talbot, MG, Belgian Tracta, Lea Francis, Bugatti. The day was so hot that the asphalt was softening.

Carraciola got away first, followed by Barnato in a Big Six. But it was Sir Tim Birkin, last of the great Bentley Boy heroes, who made the Mercedes give out with the shrill supercharger wail. In the early hours of the race, Birkin passed the German time and again only to be plagued by tire trouble. Tires of that day couldn't stand the 126 mph speeds on the straights in the hot sun—not under the heavy Bentleys. At one time Birkin was driving on the tire carcass at 100 mph.

Alternating with Birkin was the French driver, Jean Chassagne, who had plagued the Bentleys in years past. He kept the hot pace when Birkin rested. But finally, after four hours during which the duo averaged near 90 mph including pit stops and a roadside breakdown, the lead Blower Bentley began to fall back as night approached. Immediately, Barnato, who had been staying off the pace, opened up and took up the duel, gaining and relinquishing the lead time and again as Carraciola and Christian Werner, his co-driver who had been expected to drive a second Mercedes which wasn't completed in time pulled ahead on the straights.

Then with all the suddenness that had started it, the duel was over with the Mercedes on the sidelines. Its engine had withstood the strategy, but, as Herr Dr. Neubauer announced stoically, the car wouldn't start after a pit stop because of a short in the dynamo.

Bentley came in one-two in this race; a Blower driven by Frank Clement placed second. It was the last big Bentley victory as a team, but it was not the last proof of the fantastic perfection of the car. Birkin drove a big two-ton Bentley to second in the 1931 French Grand Prix, losing by only nine seconds. Perhaps this was the peak achievement for the car which Ettore Bugatti called "the greatest truck in the world."

At the last minute the Grand Prix was thrown open to all comers, because under the prevailing formula, entries were so sparse as to threaten the existence of the event. It was a good idea, but it came so late that only a horde of racing Bugattis, and Birkin's stripped down 4.5 litre Bentley registered.

The race, outside the city of Pau in southwest France, drew 23 starters, 16 of them Bugattis. Others entered included two Ford Specials from Belgium, an Aries, a Delage, a LaPerle and two Peugeots. The four-seater Bentley

was exactly twice as heavy as any car in the field.

It was a perfect setting for a Grand Prix, sun blazing down, enormous crowds lining every foot of the course, the cars lined awaiting the starter's flag in rows of six. W. Williams, an Englishman on the Bugatti team, leaped into the lead, followed by a horde of Bugs. Jealousy was keen among the Bugattis and Williams pressed his mount to the utmost, pushing his lap time to 96 miles per hour. But the car went stammering into the pits after eight laps and Bouriat, another team driver, took the lead. Birkin had pulled up to sixth. Though he lost ground to the Bugattis in the tighter of the turns, his Bentley ate them up with a thunderous 135 mph on the straights. Phi Phi Etancelin, one of the independent Bugattis, was laying back, too, waiting for the team men to burn each other out. They did, finishing off a host of competitors in the process. But not Phi Phi or Birkin. Etancelin moved into first late in the race and Birkin pulled into second.

Then came one of the most unique duels in Grand Prix history. Etancelin didn't have much fuel left so he could take the chance of coming out of curves fast where he might have gained time. But Birkin, his supercharger wailing, was cutting off seconds on each straight. Somehow Etancelin managed to stand the Bentley off. As the French crowd screamed in a mixture of excitement and pride, he hurtled across the finish line first. But Phi Phi's victory was anything but comfortable. He had about a glassful of gas left and five of the six retaining bolts on the clutch were broken (the last was cracked).

Birkin had beaten third place Juan Zanelli of Chile (in another Bugatti) by about 3½ minutes. But that was the end as far as Bentley racing triumph went.

In 1933 a private owner tried Le Mans and ran into a sandbank on the fifth lap. In 1950, E. R. Hall, a Canadian, took one of the old green monsters and finished fifth at Le Mans. W. O. Bentley went out in a blaze of glory with a fabulous 8-litre model, a magnificent luxury car which had the misfortune of seeing the light of day during the Depression's early days. Its two accelerators—one for city driving and one for the open road—probably put the crusher on the myth that the Bentley was well beyond the driving ability of the non-enthusiast.

Soon after, Rolls-Royce took over and Bentley eventually turned up as a luxury sports tourer, retiring from factory-sponsored racing. The first Rolls-Bentley, a 3½ litre based on the Rolls Royce engine but developing 120 bhp, came out in 1933. Unlike its namesake, it had a dead silent engine whence the nickname "the Silent Sports Car". After this came a 4½ litre called the Mark VI, redesigned in post-World War II for about 110 mph. The Bentley Continental, beautifully appointed, sells for some \$17,000 today. Latest, however, is the Bentley "S" series which can combine for the driver a limousine smooth ride and sports car handling.

But the golden Bentley years and the genius of W. O. have virtually passed on. All that remains are the glorious old cars, a trophy given in Barnato's honor annually to the man who has done most for the Sports Car Club of America, and W. O.'s double overhead camshaft Lagonda engine that powered the earlier Aston-Martin DBIIs.

Just this—and racing's most majestic memories. #

MG

(Continued from page 15)

mph and the standing mile at 93.4 mph at Gyon, Hungary. He put in a bronze cylinder head and won numerous road races and hill climbs, too.

EX127 was then supercharged for a new attempt at the flying mile, this time to be made on the Frankfurt autobahn. The car ran with three piece valve guides for the bronze originals were sawed in half and an iron piece put in to aid in cooling. The record was pushed to 140.6 mph.

Soon after the car was sold to Mercedes and was torn apart. According to some observers, the next Merc V8 1500 cc Grand Prix car showed unmistakeable touches of MG.

Meanwhile MG had decided to corral a few class G records to go with its class H laurels. It made a pact to build another special for Eyston. At first it was a K3 engine and chassis with a special body and one of Eyston's superchargers.

But a couple of the factory boys got overenthusiastic and prepared the vehicle for a shot at the world hour mark, unlimited class. They had the further bad taste to fit a competitive supercharger (Zoller). They flopped miserably managing about 134 mph. Soon after, Eyston had ripped out the Zoller, installed his own Powerplus and went out and cracked all the class G marks.

Eyston had a definite philosophy about smashing records. He liked to push them up a little at a time, keeping something for next time. He reasoned that he was in the record-setting business and it would be silly to set speeds he would have to sweat to exceed.

Eyston found new cooperation at MG, for 1936 was the year Kimber saw Goldie Gardner setting lap marks in a K3 at Brooklands.

So Captain George got himself a bronze cylinder head and with a couple of minor modifications took off to France where he drove the car at 142 mph average, resatching the class G marks Maserati had stolen a few months before.

EX185 came to be known as the Magic Magnette for Eyston and its subsequent owner, Gardner. Both had great luck with her. Capt. George tried that year on the Frankfurt autobahn for 150 mph. He got 148 mph and military cooperation to the extent that a whole battalion was detailed to keep him and the company happy. He also spoke with Auto Union engineers who suggested an all enclosed body for this record car. But Eyston handed it over to Gardner before action was taken.

Gardner commissioned Reid Railton, the gent who did the body for the John Cobb world speed record car to build a super streamlined all enclosed body. Railton came up with a body that weighed 228 pounds.

Despite the fact that he made no wind tunnel tests, the Railton design was considered near perfect. Other important EX185 changes included friction dampers instead of shock absorbers and a water-cooled block.

In November, 1936 on the Frankfurt autobahn, Gardner won himself the Seagrave Speed Trophy with a 187.61 mph average run.

With war clouds gathering over Europe, Gardner took EX185 to the Dessau autobahn, setting a new flying kilometer (203.5 mph), flying mile (203.9) and a host of other class F records.

The EX185 was stored during the war and although it was in a bombed out area of England, essential parts of it came through unscathed.

So in 1946, Gardiner and the car (750 cc) found a stretch of highway in Jabbekke, Belgium smooth enough for their purposes and proceeded to set new class H marks. He also took a crack at the 500 cc marks by blocking off two cylinders and at class E by installing a Jaguar engine.

The next factory special came in 1954 when the EX179 and Capt. Eyston got back into the act at Bonneville Salt Flats. Eyston, 57 years old, and primarily an oil man, picked up Ken Miles, 36, an Englishman living in Los Angeles who had enjoyed fabulous success racing an MG special of his own design.

The two of them, last August, raised some class F records by an average of 15 mph. They got the 500 mile, 1000 mile, 1000 km, 2000 km, the three, six and 12 hour marks at around 120 mph, and the flying start 10 mile mark at 153.69 mph.

EX179 used a TF engine with a standard MG gearbox. It was bored to 72 mm giving it a 1466 cc capacity. It was not supercharged, and had twin S.U. carburetors. It ran on a mixture of premium pump gas and methanol for the record attempts. The body was of the all enclosed type, measuring 40 inches at the top of the transparent cockpit cover. It was 189 inches long and 63½ inches wide.

The chassis frame was close to the type now on the new model A. The driver sat in the left hand side and in the right is a 30 gallon fuel tank. He could control the flow of fresh air into his cockpit by means of a lever.

Suspension was standard TF with the exception of TD Mark II friction dampers being added to the front and hydraulic dampers on the rear.

Out of EX179 was evolved the Le Mans 1955 prototype, EX182, very similar mechanically to the A which was developed from it.

From its earliest days private owners have been using MG components in Specials of their own, and since several of the gents have been dragged in by their heels into the MG saga, it might be well to note their efforts.

R. T. Horton made his own car bodies for the M and the K models. The man either was an auto genius in disguise or a remarkable driver, for his specials kept on potting Brooklands marks set by drivers favored with factory approved special bodies. In fact, factory opinion of some of his creations was definitely of the monocle raising type.

It was inevitable in the postwar period that someone was going to hop up the MG for racing. The names of Lester MG, Kieft, Lotus and Miles Special are familiar to those who follow competition and will, in time, become sports car legend.

Suffice to say, they have all taken some MG components—usually the motor, expertly modified—and put them on specially designed chassis.

Miles, for instance, used a bored TF block, his own chassis and body, TD steering, Mark II brakes, Morris Minor torsion bars, and his own rear suspension. The result is a car which KO's many Jags, Porsches and even OSCAs. It compiled a record good enough to earn Ken a spot in EX179.

All in all, the work done in the past by MG's has sometimes led the way, sometimes contributed, but always has had a profound influence on the men and machines concerned with breaking down old standards and setting newer, loftier ones.

#

World's Fastest

(Continued from page 41)

manufacturing firm of Continental A.G., and the latter responded by developing special tires calculated to stand up under speeds around 450 mph.

Before the car was completed, Daimler-Benz got an added stimulus: in another run at Bonneville, Cobb had coaxed his Railton up to a fantastic speed of 367.181 miles an hour. The new record spurred the factory to work faster on the T-80.

More than 35 years of experience in trying for record speeds went into building the T-80. As early as 1901, a 35 horsepower Mercedes hit the then unheard-of speed of 49.4 mph at Nice, and a year later a 40 horsepower Mercedes raised this to 51.6 mph. By 1904, the factory had improved the car to the point where its 90 horsepower engine carried it to a startling speed of 97.2 mph.

By 1905, Mercedes cars were going after the speed record in earnest. A specially-built Mercedes powered by two 60 horsepower engines roared over the sands at Daytona Beach to

a new record of 109.6 mph, and by 1911 the famous Blitzen Benz had recorded 141.7 mph.

In 1926 the Daimler and Benz companies consolidated, and the newly united company's SS, SSK and SSKL Mercedes broke many speed records in the late 1920's and early 1930's.

With this background, much of the engineering know-how required for speed records went into the T-80, and by late 1938 the car was completed and ready for its first test runs. Daimler-Benz engineers, renowned for their ability to estimate a car's top speed within a few miles an hour, predicted that the T-80 as it stood would hit 466 mph—and with the modifications that would naturally follow the first trial runs, that a speed of 500 mph was not impossible!

As the Daimler-Benz racing team was preparing to dismantle the T-80 for shipment to the salt flats of Bonneville where it would tackle the world speed record, the German government stepped in. Adolph Hitler's

plans for world conquest had created tense feelings throughout the world, and the international mood was not conducive to such a trip. German officials refused Daimler-Benz permission to ship the T-80 to the United States, and it looked like the T-80's chances for a record were ended before they started.

Daimler-Benz executives prevailed upon Hitler's subordinates, however, and convinced them of the value of the speed record being set by a German car. Instead of allowing the factory to ship the T-80 to America, the government began constructing a special seven-mile-long strip of concrete near Dessau. The land was as flat as Bonneville, and the location was ideal for a test run.

With the strip near completion, with the T-80 ready to run and with Daimler-Benz' top driver, Caracciola, prepared to be the first man to drive more than 400 miles an hour, World War II broke out. With the first shot, the T-80's chance to prove itself faded into a dying hope.

The T-80 survived Allied bombing during World War II, but with the war's end and the resumption of Grand Prix competition by Daimler-Benz, the T-80 remained in the Untertürkheim museum. Twice in recent years, Daimler-Benz has suspended Grand Prix competition because of the huge cost. A try for a new speed record, even though the T-80 would virtually guarantee success, would be a tremendously expensive venture—one, evidently, that Daimler-Benz is not willing to undertake in the immediate future.

Some day, perhaps, the giant doors of the museum at Untertürkheim will open, and the gleaming T-80 will be rolled out. It will be stripped, examined carefully for any damage it might have suffered over the last 16 years, crated up, shipped to Bonneville, and reassembled.

And some bright, sunny morning, when the wind and weather conditions are ideal, the T-80 will come to life with a powerful, ear-splitting roar. And some lucky driver, perhaps famed champion driver Juan Manuel Fangio, will slip behind the T-80's steering wheel and take off like a jet into the sunrise.

When and if this happens, the existing world speed record of 394.2 miles an hour, set by John Cobb in his Railton on the same Bonneville salt flats on September 16, 1947, will fall with a resounding crash. And the world will see the fastest car in the world, the Mercedes-Benz T-80, hit 450 miles an hour for a new world speed record! #

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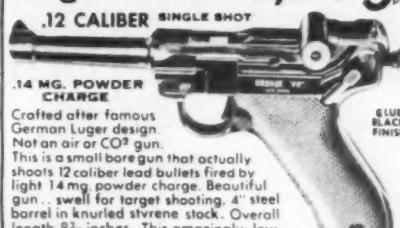
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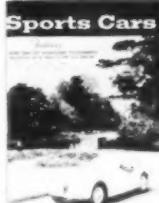
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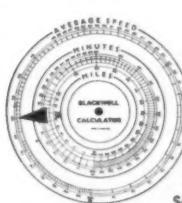
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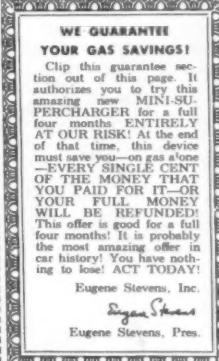
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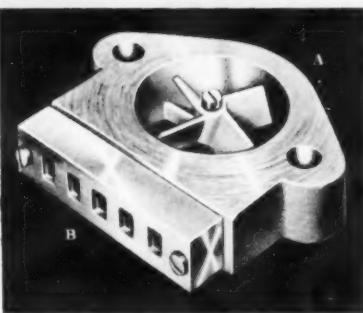
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